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A Survival of Prehistoric Architecture, Life, and Manners.

SOME short time ago, in our notice of Dr. Schliemann's splendid discoveries on the site of Troy, we called attention to the evidence produced to show that the history of mankind had by no means been one of unbroken or continuous progress. A ruder people were proved to have reared their dwellings on the site of the burned city inhabited by the owners of the golden treasure. People who built in wood, or in wood and mud, became lords of what had been the heritage of builders in hewn stone. The importance of the observation, whether from the architectural or from the archæological point of view, is cardinal. It is thus most interesting to collect, from the pages of recent, and of not very recent, travellers, evidence that shows that a similar process has taken place in Japan, and that almost, if not quite, within historic times. In Ilium it is only from the burned or buried relics of the past that we arrived at our conclusions. In Japan we have two forms of civilisation,—if we use the word it is only for want of a better,—to some extent separated by space rather than by time. We have the living relics of an Aryan race displaced and dominated by a race of fish-eating slovens. We have the architecture of the conquered race *in situ*, and in occupation. And we have a crowd of half-obscured facts, from which, when they shall be duly completed, verified, and co-ordinated, we shall not fail to derive much definite and valuable knowledge as to this portion of unwritten history.

The people to whom we refer as furnishing so remarkable an instance of a survival are the Ainos of Yezo, an island of an area of above 35,000 square miles, immediately to the north of Japan, of which latter country they are regarded as the aborigines. They are a race of Aryan affinities, although we have not found any account of their language given by the few writers who mention their existence. Of these the latest is Miss Isabella Bird, who spent a month in Yezo, in the autumn of 1878, during which she travelled through the island for the distance of some 360 miles. Her notes, though necessarily hasty and imperfect, are yet full of various details, and are especially interesting from the point of view which we have above indicated, namely, that of exhibiting the survival of manners and customs that at one time marked the crest of civilisation, at all events, among certain races,—certainly among those who once ruled the finest portions of the earth.

Of the houses of these people we have not only some account, but several sketches. They differ materially from the architecture of Japan, rather resembling the tents of the Polynesians. In some cases they recall to mind the lake-dwellings of Switzerland, being reared on piles, though not built over water. On a platform supported by widely-interspersed piles, in some cases, and on the ground in others, are reared huts of reeds, very neatly tied on to a wooden framework. They have small windows and high-pitched roofs, the thatch being fancifully arranged, and the ridge-poles covered with reeds, and ornamented. Storerooms raised 6 ft. high from the ground, on wooden stilts, are attached to most of these houses. The word for village or town in the Aino language is said to be "Bets." This recalls the Semitic Beth, so familiar in Syria, or under the form Pi, in Egypt. But among the Ainos the term is used after, instead of before, the determinant,—Horobets, not Beth Shean.

Like the houses of the Japanese, those of the Ainos are ill fitted to resist a rigorous climate. In possessing doorways, windows, central fireplaces, and raised sleeping-places, the Aino dwellings approach the European type, especially as found among the Scottish Highlanders, rather than that of the Mongols. But if we may judge from Japanese sketches of Aino interiors, that feature which we pointed out as indicated by the round-bottomed pottery of the early Trojan cities still predominates among the Ainos. They have no tables; they squat on the floor at their meals. In one sketch they are shown at a meal, men, women, and naked children al squatting around a semi-globular cauldron, hung from the roof by a cord, over a fire in the midst of the apartment. Shelves are found in some of the huts; the seats of honour are movable platforms, on which mats are placed for the use of the guests; and the mode of sitting is not on the heels, but on the ground with the legs doubled together.

The usual appearance of the dwellings of the Ainos is described as that of a small house built on to the end of a larger one. The small house is, in fact, the vestibule or entrance-hall. It is entered by a low doorway screened by a heavy mat of reeds; it is never furnished with a window. It contains the mill, or large wooden mortar and two-ended pestle used for pounding millet, a wooden store-place for the same seed, nets and hunting apparatus, and bundles of reeds for repairs. This vestibule is divided from the larger apartment by a heavy mat of reeds, bound with hide, that falls over a doorway. These rooms measure from 15 ft. by 20 ft. to 35 ft. or even 45 ft. square. The high pitch of the roof gives a lofty air to these apartments, otherwise only deserving the name of huts.

The frame of the house is made of timbers, some 5 ft. long, set 4 ft. apart, sloping slightly inwards. The height of the walls appears to have been determined by the length of the reeds, which do not quite attain 5 ft. The posts are hollowed on the top to receive the poles which form the top of the wall, and which are connected with two rows of slighter poles, tied on horizontally. The wall is double; the outer part is formed of bundles of reeds tied on to the framework; the inner of single reeds so attached. The framework of the roof is carried to the height of 20ft. or 22 ft. above the top of the wall; it consists of poles tied to a heavy ridge-pole. At one end of the roof is a triangular aperture for the escape of smoke. Two rough beams cross the width of the house, resting on the posts of the wall, and on props let into the floor. These allow of the erection of an interior roof, or ceiling, which is said only to be used for guests, and which also answers as shelves. But in stretching from wall to wall they so limit the height of the apartment, that it is necessary to take care not to knock the head against the poles, to the dislodgment of spears, bows and arrows, and other implements laid thereon. The roof and rafters are black with smoke. Small square windows open immediately below them, at one end and one side of the building. They are closed by night with wooden shutters, which hang down by ropes during the day. Nothing, it is said, is a greater insult to an Aino than to look in through his windows.

The reed thatch of the roof is externally neat, and is formed into a series of ridges. The ridge pole is thickly covered with thatch, which along the ridge and at the corners is bound down by means of strong peeled twigs, arranged in an ornamental pattern.

On the left of the doorway is fixed a wooden platform, 18 in. high, covered with a mat, which is the sleeping-place. If the family be large, there are several of these simple beds. A pole is fixed horizontally above the edge of each sleeping-place, in order to support mats, which are used as curtains, to protect the privacy of the sleepers. These mats are plain on one side, but covered with a diamond pattern in red and brown on the other. The floor is covered with a coarse mat. The fire-place is surmounted by a wooden frame-work, from which the cooking-pot is hung, and on which is also hung a mat, that diverts the warm air, and the soot with which it is charged, from a too ready escape into the outer air.

Fetishes, amulets, or something that comes under the comprehensive name of Kami, which is commonly translated gods, are always to be found in the Aino dwellings. These objects generally take the form of white rods or posts, with bunches of dependent fibres. The principal fetish, a post 2 ft. high, with spirals of shavings depending from the top, is always planted in the floor, near the wall, opposite to the fire, on the left side of the room. On the same side is invariably placed a low broad shelf, which usually supports valuable objects of antique art, often much the worse for neglect. These are generally of Japanese origin, and are

treasured as heir-looms, as having been presented by some Japanese prince or great man to the ancestors of the owners. Nothing will induce the Ainos to part with any of these objects. "They were presents," they say, "from those who were kind to our fathers. We cannot sell them."

In addition to the variation in architectural motive that exists between the houses of the Ainos and those of the surrounding Japanese, there is a curious contrast in the matter of cleanliness. Neither race, indeed, appears to have any claim to the possession of that virtue as we regard it. In both Japanese and Aino houses the insect pests are so numerous as to be intolerable to strangers. This, however, is not peculiar to Japan. It is lamented as loudly by Mr. Lawrence Oliphant, in his recent tour through Eastern Syria, as it is by Miss Bird. The mats, which form the principal furniture of Japanese dwellings, are particularly convenient for the homes and shelter of fleas and their allies, and the idea of routing these vermin is one not yet introduced into that country. But while the unsanitary state of the Japanese villages is often such as to poison the water in the wells, the mountain villages of the Ainos are kept perfectly free from litter, rubbish heaps, puddles, or any kind of untidyness. The Aino houses are ventilated, and as the stores of salt-fish and other eatables are kept in separate "godowns," or store-rooms, the interiors are free from the abominable odours which infest the Japanese dwellings; but it is necessary to look all round before pronouncing the word clean. The Ainos never bathe; their washing is of the very slightest character. They are extremely modest in their personal habits, and say that the gods would be angry to see them without their clothes. The Japanese, on the contrary, although they clothe themselves cumbrously in cold weather, go almost perfectly naked in the summer, the men wearing only a narrow cotton girdle, and the women a tight scanty petticoat. They are great bathers; but as the water used is rarely changed, and serves for the immersion of numerous persons, it is rather for the sake of the pleasant warmth communicated to the person by the bath, than for that of purification, that the latter is so much resorted to. Under the new *régime* now in course of introduction in Japan, nudity is forbidden, and the police arrest persons found without the kimono, or garment like a dressing-gown, which is the usual national attire. But the police regulation does not seem to extend to the baths, in which persons of both sexes and of all ages are wont to congregate, in very scanty attire, if in anything worthy of the name. These contrarieties of habit are very remarkable; no less are the scrupulous cleanliness of the mats used by the Japanese by way of carpets, and the exquisite order and neatness of the arrangement of their dwellings, combined with the apparent absence of the sense of smell, and the existence of abominations which it would be complimentary to call dung-hills, close to their abodes.

The point, however, which at present chiefly interests us is the difference between the architecture of the two races, as well as such difference between their modes of life as may be expected to leave traces that may be identified after a long lapse of time. Both Japanese and Ainos are limited, like other builders, in their choice of materials to those supplied by the country. But there are certain marked differences between the races in the use of these same materials. And mud or clay, whether used in its primitive state, or burned into brick or tile, is familiar to the use of the one people, and not, as far as we can gather, to that of the other.

The lofty-pitched roofs of the Ainos, although covered with the thatch of the Japanese reed, seem to betray a totally different origin from that of the ponderous tiled roofs of the more important Japanese structures. How far the temple architecture of Japan is original, how far it has been copied from China, or how far it may betoken a native origin, modified by foreign influences, are questions as yet hardly ripe for discussion. In the use of the same materials for the construction of houses, the exigencies of the carpenter will make themselves felt, and we shall be likely to find very similar forms reproduced. At the same time, if we compare such elevations as those of the Aino houses at Biratori, which are figured by Miss Bird, of which the lofty roofs recall the idea of the French Mansard, with the entrance to the shrine of the seventh Shogan at Tokiyo, figured by the same author, or with the temples of Kama Koura, figured by M. Aimé Humbert in "Le Japon Illustré," it becomes at once apparent that, underneath the bondage imposed by the materials of construction lies an essential difference in the central conception of form. The temples are pagoda-like, or even actual pagodas. In the pagoda we have the form of the tent made permanent in non-textile materials. And the curved roofs, which take their likeness from the textile roofs of tents, are essentially different in idea from the conical roofs which originate in the use of poles, or, in some cases, of piled and over-setting stones. In comparing the roofs of the Teutonic and the Latin races in Europe, we have been accustomed to ascribe the high-pitched gabled roof to the needs of a climate where snow may at any time become deep, and the level flats of the Italian houses to the more frequent need of shelter from the sun, and of providing a cool area for taking the air, or even, in the heat of summer, for sleeping under the canopy of heaven. But everything is interesting that tells us of architecture in its cradle, and the relation of architectural forms to ethnological divisions is one of those points in which this interest culminates. Our view is, that in so far as the pagoda outline prevails in the structures of Japan, or in so far as the actual structures appear to follow, at however wide a distance, the pagoda type, we have traces of a Mongolian or Turanian origin, and of the descent of the builders from a people who formerly lived in tents, and thus were of nomadic habit. On the contrary, in the high-pitched roofs we have the evidence of a people who, when they began to build, built in wood,—a nation of hut-dwellers, as distinguished from tent-dwellers, and thus a people rather of sedentary than of nomadic habit.

It is highly probable that those who reared huts on the borders of uncleared forests were originally hunters. And it is further possible that, in a very early stage of human existence, a nomadic people, who owned cattle, which they would drive from pasture to pasture, following them with their readily-shifted tents, were a more civilised people, so to speak, than the hut-building hunters. But the fact of striking the roots of the house into the ground, in which the humblest shanty differs so much from the tent, has in itself this wonderfully educating effect. It affords a motive for cultivation. The nomad, of his very nature, neither sows nor reaps. The idea of seed time and of harvest naturally attaches to the idea of settled residence. It is around such an abode that cultivation first becomes possible. And thus it is quite conceivable that the Aryan hunting tribes, at one time wilder than the flock-owning Turanians, outran the latter in the race of civilisation so soon as the exhaustion of their hunting-grounds compelled them to give some heed to the artificial culture of cereals, roots, and other vegetable food.

Here, again, we come in contact with another of those remarkable indications of a course of past events that was long unsuspected, of which one has been furnished by the superimposed strata of Hissarlik. In the fourth city on that site are found the indications of the abode of a people who lived mainly upon a fish diet, and who were in the habit of leaving their kitchen refuse in the midst of their abodes. These two habits are thoroughly Mongol. They are those of the Japanese of the present day. They contrast with the greater cleanliness in their abodes of the former inhabitants, just as is the case with the Ainos. Among the latter, the preparation of vegetable food occupies a primary rank. The mill is ever found within the vestibule. We do not wish to run the parallel too far, the more so because, as yet, we are only on the traces of the very earliest indications of an unexpected revolution in the order of national sequence. Still, the reversion to a shell-fish diet seems to be an indication of the domination of a lower race of people; and without insisting, at the present time, that similarity is the same thing as identification, we cannot blind our eyes to the evidence, in such different parts of the world as the coasts of Asia Minor and the islands of Japan,—of the subjugation of an Aryan by a Mongol race, or, at all events, of the rooting and spreading of the latter over localities once occupied by the former,—and by the former in an advanced stage of civilisation,—at all events, in the former case.

Further, we have to call attention to the sequence of building in small uncut stone, building in large stones, building in brick, and building in wood, or wood and clay. Here seems to be another mark of ebb and flow in the tide of human progress. Whether the builder in wood be a hunter, who first piled the logs of the forest into huts, or the predatory sailor, who, taking root on a coast that he had pillaged, built cabins like those of his vessel; or whether it be a lake-dweller, who drove piles in the water on which to erect houses that should be safe from the attacks of wild animals,—for we take it that wooden dwellings may be traced to these three origins,—it cannot be denied that the builder in wood is a man of a lower order than the builder in stone; lower, that is to say, if we compare the capabilities of each for making and for maintaining progress. We do not say that the builders of the rude megalithic structures with which we are gradually becoming acquainted in different parts of the world were more civilised than the builders in wood who, in different countries of the north, have added such decorative beauty to highly-picturesque designs. But if we look at the one question of permanence, we must at once admit that the mason is the builder *par excellence*. We may take an English first-rate man of war, as that marvellous floating structure navigated on stormy seas before the introduction of the iron-clad, as the most perfect work of the builder in wood. And in some of the cathedrals of Norway or of Sweden we may trace the noblest work to which the descendants of the shipbuilding sea-kings have attained when they rooted their houses in the soil. Very perfect, very wonderful, very beautiful these wooden structures are, or rather were, for they are vanishing even as we admire them. But what are they to the Parthenon, to the Coliseum, to St. Peter's, even to Somerset House? In all art, the selection of a refractory material gives in itself something of a warrant of excellence. That genius is the highest which overcomes the greatest obstacles. That work which, when complete, endures, is sure to be the finest work. The resistance of material is one of the greatest educational factors in the progress of the artist. Thus in principle, and apart from any details which, in any individual case, may and must modify the opinion to be formed, the succession of a wood-building to a stone-building people is not an advance, but a retrogression in civilisation. It is the same with the succession of a fish-eating to a grain-eating or to a meat-eating people. It is the same with the succession of a people who live in the midst of the remnants of their food to a people who carefully remove such refuse from their dwellings. Thus in the dark and shadowy past it is not to one, but to at least three indications that we may turn for information of the opinion that steady progress has not been the unbroken law of human events; and that while, on the one hand, we can trace in some instances the rapid advance of human art, and of human intelligence, from humble origin to a height that may almost be called divine, so in other instances,—as in Italy in the fourth century,—the noblest results of a civilisation which had attained a high perfection,—though perhaps at the expense of the moral and the military virtues,—has been swept into night by the irresistible inroad of some barbarian horde.

We must add that the physiognomy of the Ainos, so far as we are able to form an opinion upon it, is that of an Aryan race. Not only so, it bears the strongest relation, among Aryan races, to the ancient Greek type. As to this, however, we speak with reserve. It will be of great service to ethnological science if some of the English professors now engaged in Japan would furnish us with good photographs of that singular people. Sketches of them, indeed, we have; but when we find that in one of them the head is made to occupy very nearly one-fourth of the entire height of the figure, we decline to accept them as faithful. Nor do they agree with the written description. The peculiarity by which the Ainos are best known, that of their abundant hair, also may have been exaggerated. In this, no doubt, they contrast with the Japanese, who have sparse, but coarse, strong, lank, hair, which they carefully eradicate or shave. Some of the Ainos are described as being covered on breast, and even on shoulders, with fine black hair, as much as 1 in. long, and the luxuriant beards of the men, and hair of the heads of both sexes, recall the appellation of the "hair-culturing *Achaioi*." Others, again, have little more hair than is ordinary in Europe. On

the whole, then, we are now afforded just enough information as to this ancient race,—their architecture, their utensils, their habits, their physiognomy,—to make us eager to know more. A light on the progress of civilisation in Europe may be reflected from the shores of Japan.

INSTITUTE OF PAINTERS IN WATER COLOURS.

We fear it is hardly possible for even the most well-wishing critic to be enthusiastic over this year's exhibition of the Water-colour Institute. We made our progress round the walls with a vague but gradually increasing feeling of dismay. The average is sadly below the mark, and the things that are found on the line even are occasionally enough to make one's hair stand on end. That there is "something rotten in the state" of the Pall Mall water-colour exhibition is painfully evident, whatever be the cause.

Even the artists whose works are usually the strong points of the exhibition are not in general up to their usual standard this year. Mr. Linton contributes two single figure studies only, which he names "Janet Foster" and "Amy Robsart." There is hardly anything in the character of the figures to connect them specially with those personages; but the first-named work is, in point of colour and general handling, in Mr. Linton's finest way. Still, an artist who usually gives us some scene embodying pathos and play of character, and telling a distinct story in a forcible manner, is putting us off rather shabbily with only these two single figure studies, for they are studies rather than anything else. Mr. Collier's landscape finds its usual place in the centre of the east wall; this year it is entitled "Carting Gravel," and is a fine, forcible work in true water-colour style, but not equal in power or in the interest of the scene to others by the same hand which we have seen in the same place on the wall. The two Messrs. Green,—C. Green and Towneley Green,—show, however, that their right hand has not forgotten its cunning in any way. Mr. C. Green's "Behind Time" is an admirably humorous study of a superannuated beau in silk coat and knee-breeches, waiting on a garden-seat, watch in hand, and an injured and surprised expression on his face, for some nymph who has, perhaps, found a more congenial companion. Mr. Towneley Green's two small works, "A Fruitseller" and "Spring Flowers," are very charmingly and beautifully finished little pictures; his larger drawing, also, "Talking him over," less delicately painted than these, has character and point in the treatment of the subject. Mr. Aumonier sends a large view of "Chelsea from Battersea Park," the finest point in which is the silvery tone and reflected light of the water (which is, in fact, rather an idealising of the general aspect of the Thames at that point); both the foreground and the distance seem rather slighter in execution than is usual with the artist, though his fine feeling for the colour of a scene is not wanting. The drawing contributed by H.R.H. the Crown Princess of Prussia, a head of a monk enveloped in a cowl, is a powerful bit of work, very artistic in feeling. No title is appended to it. Various small landscapes by Mr. Harry Hine, who is, we presume, the son of Mr. H. G. Hine, show that he has inherited some of his father's talent, and are all marked by refinement of feeling and very good style, the shortcoming of which is, perhaps, that of being a little deficient in force. Mr. H. G. Hine has a fine work, "Mount Harry, near Lewes," showing his favourite Down scenery a little more diversified by trees, more "planted up," we may say, than is usual with him. Mr. E. J. Gregory's "Last Touches," is a very cleverly painted and highly-finished scene in the interior of a studio, but ugly and uninteresting; the figures are a not over-refined painter, in a very ungainly attitude, contemplating his work, and an over-dressed woman behind, probably the sitter. It is a pity so much clever painting has been wasted on a work which it is so impossible to care much for. Mr. Fulleylove has one or two nice things in the class of garden subject which he has taken up, and a very painful larger work illustrating the well-known story about the young Italian bridegroom who put his wedding-ring on the finger of a statue of Venus, and could not get it off again; but if this is the best the artist can do in this more ambitious type of subject, he would surely be wiser to go back to his garden hedges and statues. Mr. C. Staniland has given an admirable and really humorous study of a fat old monk in the drawing, "Labour is Worship," though the tone and composition are not very pleasant as a whole; and Mr. Tenniel's "Gil Blas" arraying himself in the blue velvet, and on tiptoe with interest and self-appreciation before the looking-glass, is a good piece of humour as well as a good piece of painting. A study of a head by Mr. W. L. Thomas, entitled "Dorothea" (*Middlemarch*), is a powerfully painted and characteristic head, though we cannot accept it as "George Eliot's" heroine, and wonder whether it was really painted as such, or painted as a study, and labelled afterwards. We strongly suspect the latter is the case with nine out of ten of the ideal character heads we see in exhibitions, the relation of which to the character they are named after is never established until the question arises, "What shall we call it?"

Among other works there is a good drawing, "On the Lledwr," by Mr. Syer; Mr. Orrock has caught a very real effect of sunlight on the middle distance in his "Askrigg Moor"; Mr. Vacher's Egyptian scenes are fine and worth careful attention, both in regard to the atmospheric effects and the treatment of architecture. In this latter point, however, the lead is taken by a lady, Mrs. Elizabeth Murray, whose "Old Palace in Venice" is good, and "Deserted House in Morocco" still better, and, in fact, as clever a piece of architectural painting as one could wish to see. Mr. Fulleylove has treated the "Interior of the Baptistery, Siena," exceedingly well. Mr. John A. Houston's "Eastern Question," and "Pine Forest near Pisa," are both finely executed drawings, not showing much feeling. Mr. Wood's "Abbeville" and Mr. Wyld's "Canal at Venice" are good bits of architectural work.

The drawings we have named, collected in a small room, would, no doubt, be pronounced a good collection, and the enumeration of them may seem to contradict the opinion we expressed at the head of these remarks. But we have avoided reference to any except the drawings we admire. They are picked out from a mass of sadly weak and commonplace work, and the absolute vulgarity (artistically speaking) of some of the works which are prominently hung could hardly be exaggerated.

ARCHITECTURE AT THE ROYAL ACADEMY.

There certainly cannot be said to be much of special interest in the designs in the architectural room this year. The various specimens of domestic architecture, which are a tolerably large proportion of the whole, seem to consist so entirely of repetitions of one or two types, that it is impossible to say anything new about them. They belong almost exclusively to one of two forms,—either the brick architecture founded on Jacobean, which is in fashion now, or the picturesque forms of half-timbered house. Some are better and more effectively drawn than others, but apart from that there seems little to say about them. There are a good many things, bits of street architecture, &c., which, apart from a certain effectiveness of drawing, seem to have absolutely no interest of any kind. Those which we will name we pick out as having some degree of originality or special character which leaves scope for remark.

Among the designs for churches, Mr. F. W. Tasker shows, in his "Interior of St. Patrick's Church, Wapping," an interesting and practical application of the basilica form of church, with a wooden entablature treated in much the same form as stone, and carried on stone columns spaced widely apart. This is a much pleasanter way of reducing the area of piers and getting a clear floor space than the employment of iron columns, and the general effect is good. The roof is a semicircular wooden barrel-vault. With this may be compared Mr. Brooks's interior of "Lewisham Mission Church," admirable as a specimen of very plain and solid stone Mediæval architecture, but certainly less practically suitable for its purpose than the last-mentioned design. There is something new and ingenious in the treatment of the imposts, for they can hardly be called capitals, of the piers. Mr. Ingress Bell's "Proposed Catholic Church at Burnley" has a pleasing Early English west front. The exterior and interior views of "St. Peter's, Southsea," by Mr. A. A. Hudson, are exhibited; the former shows effective treatment of the tower, the latter is a rich-looking interior with brick walls on stone piers, and decorated with a great deal of wall painting and an effective hammer-beam roof. Mr. Street's "North-east View of the English Church at Rome" is very pleasing, apparently one of his own drawings, with an octagonal tower treated in an original and picturesque manner. Mr. Street also exhibits a perspective drawing looking across the new nave of Bristol Cathedral, an admirable example of clear but freely-executed perspective drawing in pen and ink. Messrs. Bodley & Garner's "St. Michael's Church, Camden-town," showing the proposed tower, makes us hope that the tower will soon pass from the stage of proposition into that of completion: it is a fine piece of solid-looking work.

Mr. Waterhouse exhibits a coloured drawing of a clock-tower proposed to be erected on the Liverpool pier-head in memory of Mr. C. Turner, a former Conservative member for Liverpool. We like the tower, without finding anything very striking in it. The same architect shows a view of the library at Eaton Hall, and of the "Central Institution of the City and Guilds of London Institute for the Advancement of Technical Education," proposed to be erected in Exhibition-road. This is a plain symmetrically-treated terra-cotta front, the most noticeable point in it being the manner the arms and insignia of the Guilds are worked in as external features in decoration, on a large scale and with bold effect, in terra-cotta modelling. This neighbourhood will soon be, at this rate, the region of terra-cotta architecture. Messrs. Perkin & Bulmer's first premiated design for Pontefract Town-hall is an effective building, a stone structure partly Jacobean in detail, with the end window picturesquely treated; the whole design has, however, a rather fragmentary and put-together appearance. Mr. Brydon's "St. Peter's Hospital, Covent Garden," also a Jacobean building, is suitable for its purpose, and effective in the grouping of the windows. The same praise of suitability may be given to "St. Oswald's College, Ellesmere," by Messrs. Carpenter and Ingelow, an interior quadrangle which looks thoroughly collegiate, and is quiet and unpretentious in style. Mr. Alfred Frampton's "Details of a Design for an Art Museum" is, we presume, a student's study, and a very good one; part of the building showing two orders of Classic architecture, with sculpture in niches in the piers. Mr. Crossland's "Entrance to Students' Stairs, Holloway College, Surrey," is a rather remarkable-looking and powerfully-executed shaded drawing, showing the upper part of the building with sculpture in the pediment, large size, and a smaller elevation as well as a large-size section of the wall are got on to the same paper in a curiously naïve fashion: there is nothing remarkable in the building, which is of a common form of Renaissance, but the drawing is unusual and striking. Mr. Chisholm's "Combined Post and Telegraph Office," a building in which timber is evidently largely used, has a picturesque effect, with its open loggias and dark shadows; it is evidently a building in which economy has been studied, or more might have been made of it in the way of effect. Mr. Somers Clarke sends a design for the pulpit, "St. Martin's Church, Brighton," with a spire-like canopy apparently inspired by the Sacrament-Hauslein at Nuremberg; it is a very pretty bit of design, and duly furnished with plans of the construction of the various stages. A "Design for a College," by Mr. W. J. N. Millard,—a birdseye view of a group of buildings,—has a good deal of merit, and is noteworthy for the really pretty lantern which crowns the tower.

Among the decorative designs, Mr. Storey appears in the architectural room with a large drawing of an inlaid doorway, with panels painted with figures bearing reference to music. The inlay patterns are mostly well-known Greek forms, very pleasing in effect, white on a warm grey ground. Mr. Jewitt's small stained-glass design for an Ascension window for Hindley Church is very pleasing in design and colour effect, only that we do not quite like the realistic intertwined branches in the upper portions of the window. A small drawing from a terra-cotta warehouse, "adapted from an old design," by Mr. T. Raffles Davison, is very pretty, though it does not look as if it could be very secure without a good deal of concealed support and tie. Messrs. Crace send a drawing of colour-decoration and carved work in the Mercers' Hall; the general colour effect is agreeable, and the draw-

ing is a good one. We very much miss Mr. Aitchison's decorative designs, of which there are none to be seen this year. Mr. Walter Lane's "Side of a Drawing-room" looks rather heavy for a drawing-room, but his design for an iron screen appears to be very good, and might have been hung lower, so as to be seen. Indeed, the hanging is quite inexplicable, some of the poorest and most ill-drawn things appearing exactly on the sight level, and other apparently much better ones put nearly out of sight. Among sketches there are two water-colours by Mr. Aston Webb, bits from Malines and Liege, and one or two other interesting sketches of old bits of architecture; and Mr. Penrose sends an interesting water-colour drawing, a restored view of old St. Paul's and St. Paul's Cross, the site of which he had the good fortune to discover. The drawing we take to be Mr. Penrose's own. We wish this could be said of more of the drawings. There is far too much mere draughtsman's work in the Academy architectural room.

THE APPROACHING CONFERENCE OF ARCHITECTS.

THE following programme has been definitely agreed on:—

Friday, May 6, 1881.

8 p.m.—Opening meeting of the Conference. Reception by the President and Council of the Royal Institute of British Architects.

8.30 p.m.—Address by John Whichcord, F.S.A., President.

Saturday, May 7.

11 a.m.—Conference Second Meeting, Arthur Cates, Member of Council, in the chair. Reading of Papers on "Quantities."

7 for 7.30 p.m.—The Institute Dinner, John Whichcord, F.S.A., President, in the chair. The Dinner will take place at the Freemasons' Tavern. Member's ticket (including wine), 25s. Non-member's ticket (including wine), 30s.

Monday, May 9.

11 a.m.—Visit to the Picture Gallery of Buckingham Palace, by the gracious permission of her Majesty the Queen.

3 p.m. Visits to St. Etheldreda's, Ely-place, Holborn; thence to St. Bartholomew's the Great, West Smithfield; and St. Giles's, Cripplegate.

8 p.m. Annual General Meeting of the Institute for the election of the Council, and for other business. Only Members of the Institute can attend this Meeting.

Tuesday, May 10.

11 a.m. Conference Third Meeting, Arthur Cates, Member of Council, in the chair. Discussion of the Papers on "Quantities."

3 p.m. Conference Fourth Meeting, Charles Barry, F.S.A., Past-President, in the chair. Discussion on Architectural Competitions, opened by the Chairman.

8 p.m. Conference Fifth Meeting, Charles Barry, F.S.A., Past-President, in the chair. Discussion on Architectural Competitions.

Wednesday, May 11.

11 a.m. Visit to the Royal Courts of Justice, by the kind permission of George E. Street, R.A., F.S.A., Past Vice-President.

3 p.m. Visit, by the kind permission of Sir Frederick Leighton, P.R.A., to his residence, No. 2, Holland Park-road, W.

5 p.m. Visit to the new Hospital for Consumption, Brompton, by the kind permission of Matt. Wyatt, Fellow.

9 p.m. *Conversazione* at the Rooms of the Institute. Admittance by invitation only.

Thursday, May 12.

11 a.m. Visit to Lambeth Potteries, by the kind permission of Messrs. Doulton & Co. For this visit applications for a special ticket must be made not later than Tuesday, May 10th, to Cole A. Adams, Fellow, 14, Holden-terrace, Grosvenor-gardens, S.W.

3 p.m. Visit to Hertford House, Manchester-square, where Sir Richard Wallace, Bart., M.P., Hon. Associate, has kindly offered to receive members of the Institute and their friends.

8 p.m. Conference Sixth Meeting, the President in the chair. Papers on Mural Decoration, viz.:—"Mural Painting and the Gambier Parry Process," by Ford Madox Brown; and "The Coloured Decoration of Public and Private Buildings," by John D. Crace. Discussion thereon.

The date of the *conversazione* has been unavoidably changed from Thursday (as announced) to Wednesday. This alteration has compelled the Council to modify some of the other arrangements. Conference and other cards will be issued to members next week.

PROVISION FOR SPREADING DISEASE IN WESTMINSTER.

UNDER the signature "H. C. Burdett" appeared, in the *Times* newspaper of April 21st a letter which can only be neglected at the peril of those concerned: it is not too much to say at the public peril. It referred to a subject to which we have, on more than one occasion, done our best to call public attention, and with regard to which we have furnished a special piece of engineering information, the neglect of which up to this time has been nothing short of persistence in a course of almost inconceivable temerity. We refer to the sanitary condition of certain parts of Westminster, and notably of the Public Offices. Four years ago, the writer in the *Times* says, he had to report on this subject. Its importance has been recognised by the reports of a Royal Commission and of a Select Committee of the House of Commons. Sir Richard Cross, we are told, suffered so severely from headache during his occupation of the offices provided by the State for the discharge of the duties of the Home Secretary, that he even thought of abandoning them, and hiring a more healthy site. And we are not left to general statements. Actual search has been made in order to ascertain the conditions of the sewerage arrangements in the incriminated neighbourhood. No plan of the drains exists. Ten trial shafts had to be sunk,—as if by the explorers of Nineveh or of Jerusalem,—to find what was the system on which the health or even the life of the Home Secretary and his staff was depending. The information thus acquired seems to have been placed on record, but that is all. But this record affords a very alarming warning when compared with the results of the last investigation. In four years,—if the measurements are correctly given, and refer to the same spots,—a subterranean zone of 15 in. of sewage, over which our public business is carried on, had increased to a depth of 24 in. How much illness, how many deaths, how much inefficiency in the discharge of public duty, that increase in the store of pestilence-breeding filth may represent, we have no means of ascertaining.

We recall the fact that the cause of the unsanitary state of so important a part of the metropolis has been ascertainable for fifteen years past. In the twenty-fourth volume of the Minutes of Proceedings of the Institution of Civil Engineers, which was published in 1865, will be found the account given by Sir J. W. Bazalgette of the main drainage of London. We call attention to plates 14 and 17, which illustrate that report. Look at the important area bounded on the west by Sloane-street, on the north by Knightsbridge, Piccadilly, and the continuation of that line of street; and on the south by the Thames. We need not trace the district at this moment beyond Somerset House. The whole of this area is shown, on that map, to be drained by the northern low-level sewer. It is called "low-level." But near Chelsea Hospital occurs on the plan the word "lift." Turning to p. 298 of the volume, we find that "a district of about 14¼ square miles, forming the western suburb of London, *is so low that its sewage has to be lifted at Chelsea a height of 17 ft. 6 in., to the upper end of the low-level sewer.* If, now, we turn to plate 17, we see what this means. We have in that plate a cross section of Thames Embankment, subway, and low-level sewer. Vertical heights are not given on this section; nor is the scale indicated,—as it may be thought for obvious reasons. But, if we take the dimension of 8 ft. 3 in. given as the diameter of the barrel-drain called the "low-level sewer" for our guide as to scale, we find the centre of this sewer to be only 13 ft. 6 in. below Trinity high-water mark. On the 21st of January, 1878, the tide ebbed to 23 ft. 2 in. below Trinity high-water. At this time, therefore, the effect of the lift, and of the high-level of the sewer on which Westminster depends for its drainage, was to keep back in the drains of the district, new and old, a head of 9 ft. 8 in. of sewage above that which would have drained into the river if the metropolitan drainage works had not been executed.

By reference to Mylne's topographical map of London, it will be seen that the contour line of 10 ft. above Trinity high water runs to the north of the Mall, round to the west of Buckingham Palace, and down by Victoria-road towards the Thames. The whole of the included district,—of the residential importance of which it is unnecessary to speak,—is thus on a level naturally less than 10 ft. above high water. The effect of this fact, combined with that of the level of the sewer, was made manifest in the illness of his Royal Highness the Prince of Wales nearly ten years ago. And we have given accounts of the precautions which have since that time been taken to effect, by pumping, that drainage of the area of Marlborough House for which the main drainage of London did not provide. What has been done for Marlborough House has to be done for the entire district. If it be needful to drain this district through a sewer at 12 ft. or 14 ft. *above* low-water level, it is palpably necessary to have a really low-level sewer for the collection of the sewage and drainage of the foundations of the houses, which should be emptied by a lift of its own, or allowed to run into the system which is 17 ft. 6 in. lower than the "low-level" sewer.

On the 22nd of April Mr. John Phillips, formerly chief surveyor to the Metropolitan Commissioners of Sewers, gave his evidence on the same subject. He claims to be one of the oldest sanitary reformers now living. From 1847 to 1851 he did good service to the public in laying bare the malconstruction and abominable condition of the metropolitan drainage. He says,—and what we have just said enforces the truth of his remarks,—that the sewers in Whitehall, in Westminster, and in Belgravia are little other than elongated cesspools. "They stagnate, and would choke up altogether if men were not sent down them to flush and clean out the filth." Mr. Phillips points to "readjustment of the level," as well as to due proportion between the form of the cross section of the sewers and the work to be done by them, as necessary to make these sewers self-cleansing. As to the latter, it may be well asked why the form of a barrel-drain was adopted for the "low-level sewer"? But we question whether Mr. Phillips is aware of the actual facts, as above stated, as to level. We feel sure that the residents in this water-logged district cannot be aware of them. That the kitchen floors of many parts of the district,—we can cite Chapel-place and Charles-street, for instance,—were but a very few inches above Trinity high-water mark before the main drainage was taken in hand, we know from personal experience. Since that time, the level of the highest floods has risen by more than 2 ft. The depth of the old sewers and drains, below the old kitchen floors, may differ in different houses. So, on the other hand, will the height at which the sewage is maintained in the "low-level" barrel-drain vary. But that there is a network of old undrained sewers, for which no sanitary provision has been made, will be evident to all those who will study the above-mentioned facts. If the Administration and the public are content to dwell and to sleep over these "elongated cesspools," at all events it cannot be said in future that they do so because they have not been warned of their existence. We can only hope that the warning may not again be disregarded. To do so is to trifle with pestilence.

Old London Theatres.—At a meeting of the Royal Historical Society, held at 22, Albemarle-street, on the 21st, a paper "On the History of Theatres in London, from their first erection, in 1576, to their closing in 1642," was read by Mr. F. G. Fleay, M.A. The author had collected numerous isolated facts which enabled him to assign to each theatre, during this period, the companies who acted in them, and the poets who wrote for them. He maintained that the statements made in Mr. Collier's "Annals of the Stage" were in many respects erroneous. To no one of the theatres had that gentleman assigned the true date of its original building, and in many cases he had wrongly distributed the companies who gave performances in them. Mr. Fleay also vindicated the accuracy of the statements on these points in Howe's continuation of Stow's Chronicle.

THE LATE WILLIAM BURGES, A.R.A.

THE death of Mr. Burges, which, as all our readers will have heard, took place at his residence in Melbury-road, Kensington, on the 20th, has sadly and unexpectedly cut short a professional life which it might have been hoped had yet many years to run. Mr. Burges, who was born in London in 1827, was, therefore, but fifty-three, and had been only a few weeks before elected an Associate of the Royal Academy, an honour which, as one of the most gifted and original of the artistic architects of his day, he well merited.

Mr. Burges was the son of a well-known civil engineer, and was educated at King's College, where he was entered in 1839, and in 1844 he became pupil of Mr. Blore, the Gothic architect, whose name is now scarcely known to the general public, though he did excellent work considering the state of knowledge of Mediæval architecture in his day, and his name turns up every now and then, as in the present case, as that of the original instructor of some architect of eminence belonging to the present generation. In 1845, 1846, and 1847, Mr. Burges occupied himself a good deal in sketching tours in Sussex, Lincolnshire, and Norfolk. In 1849 he became a member of Mr. D. Wyatt's staff, and the same year made a tour in Normandy (not so general a haunt of architects then as now), which probably did much to influence his future style of design, in which he always leaned more to French than English forms of work. In 1850 Normandy was revisited, as well as Belgium and subsequently he spent the greater part of a year (1854) in France and Italy. He must have been exceedingly catholic in his tastes in regard to sketching, although very strict in his adherence to Gothic in practice, for we were informed by a well-known architect whom he had invited on one occasion to consult his sketches of Renaissance detail, that he had as good a collection of sketches of that class as if he had intended to make a special study of it.* In 1855 or 1856 he gained, in conjunction with Mr. Clutton, the first premium in the competition for Lille Cathedral, and in the latter year was also occupied with the decoration of the Chapter-house at Salisbury, finding time also for a second tour in Italy in the same year. In 1857 he obtained the first premium for the Memorial Church at Constantinople, concerning which difficulties afterwards occurred. Two or three years later he was occupied on Brisbane Cathedral, the restoration of Waltham Abbey, and on one or two churches. The competition for the rebuilding of Cork Cathedral, two or three years later, resulted in the selection of his design, and this is one of the buildings which has given him the most reputation, and is one of the best specimens of his style of working. In 1865 he entered on the connexion with the Marquis of Bute, as architect of Cardiff Castle and its accessory buildings, in relation to which also his name became much talked of, and this is perhaps the work on which his reputation with the public rests more than on any other single structure. We should have mentioned that shortly before this he had undertaken the decoration of Worcester College Chapel, in which he took much interest; about which a word more presently.

The Art School at Bombay was one of his later works, and not long after he published a rather remarkable volume of architectural sketches, very different in style from most architectural sketch-books, and which excited a good deal of attention and some differences of opinion as to their author's mode of sketching and representing details. In 1872 his designs and model for the decoration of St. Paul's were the central objects of interest in the architectural room at the Royal Academy. About the same time he was engaged in designs for Hartford College, in the United States, and the following year in another educational building nearer home,—the Ripon Grammar School. In 1875 he commenced his house in Melbury-road, which he made a kind of architectural shrine, illustrating his own ideas of domestic architecture, and in which, besides elaborately decorating the interior, he collected a number of objects of artistic interest, in many cases designed by himself. Worcester College Hall was another work of the same period. In addition may be mentioned the churches at Studley and Skelton. Mr. Burges also made many designs for furniture and other decorative work, in which he exhibited great originality and variety in the treatment of detail, with, perhaps, too great a tendency to eccentricity at times.*

Mr. Burges was an occasional contributor of papers and lectures to the proceedings of architectural societies. In December, 1858, he read a paper at the Architectural Museum on "The Conventional Ornament of the Thirteenth Century." This paper was printed *in extenso* in the *Builder* for 1859, pp. 8–10, accompanied by an engraved sheet of illustrations drawn by its author. In November, 1860, he contributed to the Transactions of the Royal Institute of British Architects a paper on "Architectural Drawing," which will be found in our volume for that year (pp. 748–751). In 1862 he delivered a lecture on "Pagan Art" at the Architectural Exhibition. This lecture was reported by us at the time (see p. 368 of our volume for 1862). In May, 1867, he read an interesting paper to the members of the Architectural Association on "Our Future Architecture," printed in the volume of the *Builder* for that year (pp. 385-87). His next paper read before the Association was in December, 1875. It was "On Things in General," and was published on pp. 1145-46 of our volume for that year; in it Mr. Burges treated of "The Present State of the Art of Architecture," of "The Institute," and of "Prospects of Future Progress." In replying to some remarks made in the discussion which followed the reading of this paper, he said, as reported by us in vol. xxxiv. (1876), p. 18:—

"As to the question of Gothic v. Classic, if by 'Classic' were meant Greek, or even if Roman were meant, he would take off his hat to it,—although even the best Roman was bad enough. But what was ordinarily meant by 'Classic' was the vilest Renaissance of George III.'s time. No; he had been brought up in the thirteenth-century belief, and in that belief he intended to die. As to working in two styles, a man could never work in two styles equally well. Eclecticism, whether in architecture or language, would only result in a farrago. Indeed, 'Queen Anne' might almost be called 'negro-language.'"

These observations, and others in his paper, show pretty well what his views were on the "Queen Anne" mode. Curiously enough, he was announced as the reader of the paper at the next meeting of the Architectural Association, to be held on the 13th proximo, and had chosen for his subject none other than "Queen Anne Architecture." Many who read these words will have been looking forward with lively anticipations to hearing the good-humoured sallies with which he would, without doubt, have twitted the adherents of "Queen Anne,"—anticipations, sad to say, never to be realised. To the proceedings of the Fourth General Conference of Architects, held in 1876, Mr. Burges contributed an interesting paper on "The Importance of Greek Art and Literature to the Practice of Gothic Architecture," which is printed *in extenso* in our volume for that year (pp. 619-20). Mr. Burges also published a volume on Westminster Abbey and a volume of Lectures on Art-Workmanship.

The place which Mr. Burges has taken among contemporary architects has been an unusual one, not only in the nature and extent of his abilities, but in regard to one point to which, in the interests of what may be called the highest morality of the profession, we wish to draw special attention. He has been honourably distinguished by a characteristic which we regret has not found more examples among those of the first order of ability in the ranks of modern English architecture, viz., in his obviously strong feeling as to the importance of making his work really and in every sense his own work, and not carrying out more than he could give his own personal attention to and produce as his own personal design. We referred in passing to the interest which he took in the decoration of Worcester College Chapel. We alluded to this because we happen to have under his own hand his remarks as to the way in which this work was carried out. In a letter to the conductor of this journal, dated May 7th, 1866, he said,—"I designed everything in the chapel, and I made full-sized drawings for the lectern and candelabra. Mr. Jacquet, of Stanford-street, Vauxhall Bridge-road, executed all but the sculpture. The latter was done by Mr. Nicholls, of Hercules-buildings, Lambeth, under my direction. He also executed the four statues of the Evangelists. I did not make drawings of the sculpture, but I supervised it. Both the candelabra and lectern were drawn out full size by my own hands. As to the rest of the work, in the coloured part I made careful sketches to ½-in. scale of the colour and ornaments, and corrected the full-sized ones when drawn out by the decorator. We spent about 3,000*l.* in all. The mosaic for altar-piece is in progress, and I could have a mosaic for the rest of the pavement, but I rather think a marble pavement will be better."

Probably those who are acquainted with Mr. Burges's manner of working will be aware that this extent of personal work with his own hands, and of careful supervision of every detail as it proceeded, was nothing beyond his usual degree of care and attention to everything he undertook. Mr. Burges had nothing like the extended practice of some of his distinguished contemporaries, but we believe he could honestly say that whatever he did was his own, and bore the impress of his own personal design and taste. In carrying out work in this way, it appears that there is far more of real architectural art likely to be produced than in carrying out an immense number of buildings with the help of a numerous staff of draughtsmen who have acquired the style of the office in which they work; a system which must inevitably lead, as it has led in many instances, to work being done in a semi-mechanical manner, up to a general level of excellence perhaps, but not with the interest and variety which can only arise from work which represents individual thought and individual design. And in regard to this feature in Mr. Burges's character and practice as an architect, we would hold out his example to the younger aspirants in the profession, and say, "Go thou and do likewise." It is not the way to make a great deal of money, but it is the way to be really an architectural artist, and to produce work which you can look back upon with satisfaction.

The general character of Mr. Burges's work is marked, as we observed, by a strong preference for forms based on French Gothic,—so strong as to give to his buildings a character rather at variance with English architectural feeling. For this reason he would not, we should say, have made a good "restorer"; he could not have kept his own idiosyncrasies of taste in the background sufficiently. This, we think, is apparent in his treatment of the east end of Waltham Abbey, which we could not regard as a success, and which does not seem at all to belong to its position. For a somewhat similar reason we could not regard his design for the decoration of St. Paul's as successful, notwithstanding the unquestionable ability and conscientious thought and study which it evinced. He could not throw himself into a style the details of which he disliked, nor even into anything really consonant with the *genius loci*. As a compromise between his own inherently Mediæval tastes, and the obvious necessity of harmonising his scheme to some extent with the architecture of St. Paul's, he fell back on Byzantine elements of design. But his design would have clashed with the real architectural feeling of the cathedral, and had it been carried out he would have made a quasi-Byzantine interior to a thoroughly Renaissance building. The work would have been, evidently was, in fact, in the models and drawings, full of power and effectiveness in itself, but we cannot believe the result would have been approved by any who feel the importance of architectural consistency of style and feeling; and this conclusion we felt compelled to express when the models and drawings were exhibited.

In Mr. Burges's designs for original buildings the marked characteristics were force and massiveness of general style and composition, combined with great picturesqueness of detail. His Law Courts design was a remarkable example of this. It was too square,—we might have almost said, too grim and stern,—in its general aspect, and strongly feudal in character; but the treatment of the detail bore the impress of great power, and a contempt for everything slight or filagree in style. It would have been a building which

* In our next we shall give a facsimile of one of his designs in that style.

* The following illustrations of Mr. Burges's works have been published in the *Builder*, viz.:—

Vol. xv. (1857), Memorial Church, Constantinople,—view and plan, pp. 150, 151.

Vol. xvi (1858), Design for a Fountain for Gloucester, p. 374.

Vol. xviii. (1860), Works of Reparation at Waltham Abbey Church, p. 72.

Vol. xxi. (1863), Cathedral of St. Fin Barre, Cork,—view and plan, pp. 350, 351.

Vol. xxiv. (1866), Warehouse in Upper Thames-street,—view, p. 851.

Vol. xxv. (1867), Design for New Law Courts,—plan, p. 90; view, p. 311.

Vol. xxxi. (1873), Design for St. Mary's Cathedral, Edinburgh,—interior view, p. 227.

Vol. xxxvi. (1878), Skelton Church, near Ripon,—view and plan, pp. 63, 65.

no one could have seen without being impressed by it, though most spectators might have felt that it was not in keeping with the intents and associations belonging to modern law courts. In his Cork Cathedral, the French style which he adopted seemed not out of keeping with the stern character belonging to the few remains of ancient Irish architecture, and, in the interior, it is a very grandly and massively treated cathedral. This same feeling for stern simplicity of general composition characterised smaller and less important works equally. We were struck with it particularly in some of the drawings of (if we remember rightly) the stable buildings for Cardiff, which were in the architectural room of the Academy one year, and which were as different from the kind of tame "dove-cot" character habitually given to buildings of this class in England as anything could be, and yet appeared in no way out of keeping with their use and position. Indeed, we should be disposed to say that Mr. Burges's domestic architecture, on a large or small scale, was his greatest success. He removed this class of architecture, in his treatment of it, entirely above the commonplace of house-building (notably so in his own house), and made it an opportunity for the richest effects of internal decoration, in which, where he was not cramped by considerations of expense, he shrank from no amount of richness and elaboration. Some of the drawings of interiors at Cardiff which have been exhibited at the Academy will occur to every one as examples of this. In his designs for furniture we have thought that he was often too indifferent to outline and too dependent on colour for his effects, and that the colour was often too strong. Mr. Burges suffered from weak sight, and, since the effect of personal peculiarities of vision on the estimate of colour has been canvassed a good deal by scientific writers on art lately, we may be pardoned, perhaps, for the suggestion that possibly his own colour schemes may not have appeared so strong to him as they did to others. Except as to this question of relative force or subordination of colour to the effect of the whole, however, he was a master of the use of colour, and knew how to produce his colour-harmonies without falling back on dull and neutral tones, or, as he once said sarcastically in a paper read at an architectural meeting, "putting a background of dirt" as a ground for the principal colours. Colour with him was colour, and not neutral shades; only there was, perhaps, a little too much of it sometimes to allow sufficient repose for the eye.

Of Mr. Burges's thorough earnestness in what he did, and his close study of his art, there can be no question. The volume of "Sketches" we alluded to above was a striking instance of this. They were not pretty sketches; some people called them ugly; but they were sketches made with the intention of getting at the heart of the detail that was sketched, finding out how and why it was made,—sketches which were not fair-weather work, but made, as he said in his preface, often on the top of ladders, with stumps of pencil, on paper wet with rain and held down against the wind (we quote from memory, but that was the purport of the words). They were drawn for publication in an equally downright and almost defiant contempt of architectural prettiness, and to any but architects were hardly comprehensible; but they form a most characteristic record of the idiosyncrasy of their author, in whom we have to regret the loss of one of the most original and earnest of modern architectural artists.

The funeral took place on Tuesday afternoon, at Norwood Cemetery, and was attended by Mr. R. P. Pullan (brother-in-law), Mr. John Chapple (of Mr. Burges's office), Mr. J. H. Christian (executor), and a large number of architects and artists, including Mr. Street, R.A.; Mr. Pearson, R.A.; Mr. Waterhouse, A.R.A.; Mr. J. P. Seddon; Mr. Somers Clarke; Mr. Horace Jones; Mr. H. S. Marks, R.A.; and Mr. Marcus Stone, A.R.A. Several of the clerks of works and tradesmen who had been engaged on Mr. Burges's works were also present.

In consequence of the death of Mr. Burges, no chimes were rung out on Sunday last at St. Fin Barr's Cathedral, Cork. At the afternoon service, the Lord Bishop delivered a brief address, in the course of which he said:—A life had passed away during the past week which they were all, perhaps, made intimately connected with. It was to him, personally, a great shock to receive into his hand the message of the death of Mr. Burges. As they looked at the noble building, they were reminded of that gifted man. It was a solemn thought that the creating mind is now at rest, that no more work will be done by the genius who, before one stone of that magnificent cathedral was laid, planned it all, and saw it in his own mind. Many a criticism was passed in the early stage of his work on the skill and power of the architect, and he (his lordship) found that of the numbers of people who from time to time came from all parts of the world, and visited that church, those who knew most of architecture,—those who had seen the works of great men in other lands,—most admired the proportions and the beauty of that cathedral He never met a professional man more thoroughly conscientious in his work, or more anxious about the detail of every part, whether of the structure or ornamentation of the building,—a conscientiousness which led him also, although his work was expensive, to tell beforehand the cost, so that he might not lead unwittingly those who trusted in him into any expense greater than was expected. The cathedral shows unity in all its parts, as the result of the work of one mind, and now that he was gone it would stand as a monument to his memory.

THE RICHMOND EXHIBITION.

THIS exhibition, which comprises a Loan Fine Art and an Industrial section, was opened on Wednesday, April 20th, with great *éclat* by H.R.H. the Duchess of Teck, and has since been attended by a large number of visitors. Even in these days, when exhibitions are plentiful as blackberries, and many people are apt to become a little tired of them, the Richmond undertaking stands out in a rather special manner, and has some distinct attributes of its own. Up to a certain point in the preparations, many objections were raised to it, the chief one being that Richmond was too near, and too much a part of, London, to offer any chance of success; also that the little town, though largely associated with royalty, was not so with industrial pursuits, and, therefore, that portion of the exhibition must be a failure. There was a good deal of reason for this anticipation, for although Richmond possesses a fair all-round local trade, she certainly has no specific industries and no numerous class of skilled artisans. The workmen, moreover, showed no great interest in the affair, and betrayed no particular desire for improvement, one of the excuses alleged being, that as the exhibition was open to all comers, the things sent in by London specialists would naturally take away all chance from the local efforts.

The promoters, however, were not dismayed by this unsatisfactory attitude, and relied, at all events, on being able to arrange for an attractive Fine Art section. Richmond and her neighbours in Surrey and Middlesex, such as Twickenham, Kingston, Surbiton, Mortlake, Coombe, and other places, are exceedingly rich in works of art of various kinds, and the confidence which was reposed in the liberality of the owners and possessors of pictures and curiosities has been amply justified by the result. The Industrial section, too, has proved far more successful than was anticipated, both in quantity and quality, there being nearly 1,000 exhibitors, out of whom between 500 and 600 are local. The exhibition, which will remain open until May 7th, is located at the Assembly-rooms of the Castle Hotel, which has been most generously granted, free of cost, by Mr. Tod-Heatley, the owner of the premises; and in the further one of these two beautiful rooms, the Fine Art Exhibits, and in the other, the Industrial, have been admirably arranged by Mr. J. H. Cundall, whose name has been long known as the responsible authority in charge of the British Section of the Exhibition buildings at Vienna and Philadelphia. South Kensington contributes most liberally some half-dozen cases of electrotype plate, old glass, enamels, pottery, and Indian brocades; and Messrs. Elkington follow suit with a fine selection of their *repoussé* and *cloisonnée* work. The principal exhibitors of pictures are Mr. H. G. Bohn, who sends a most interesting collection by Hogarth, Sir J. Reynolds, Morland, Old Stone, Marlow, and Wilson, together with Sir William Ross's miniatures of the Royal family. Amongst the more notable paintings are works by Landseer, Leslie, Marks, Ward (an unfinished picture upon which he was engaged at the time of his death), Danby, Linnell, Herring, Whymper, Lewis, Turner, &c. There are also a portrait of James II. by Sir G. Kneller; Gainsborough's "Blue Boy," contributed by Mrs. Freake; and a portrait of "Nell Gwyn," by Sir Peter Lely. The landscapes and drawings comprise a very interesting series (from different collections) of views of Old Richmond, by Marlow, Nasmyth, Hofland, Hogarth, and others; and show us what the ground plan (so to speak) of Royal Richmond was before modern requirements covered it with houses. It must be confessed that, looking at the exceptional natural beauties with which Richmond is gifted, the builders of the last twenty years have done their best to spoil them; and, although there are many nice and fairly pretty houses to be found here and there, the general effect of modern Richmond is that of sad suburban mediocrity, without character and without taste. Nor is the nuisance come to an end; for, although (unhappily) the Hill cannot be spoilt more than it already is, fresh lines of houses are springing up in the more level parts of the town, particularly towards the Mortlake-road,—and it is to be presumed that the pleasant fields and garden at Sheen will soon fall victims to the nineteenth-century building speculator. Recurring to the Exhibition, it is satisfactory to find that the Industrial Section shows much that is worthy of notice, particularly in the carving and modelling and objects of artistic workmanship. Putting aside the eccentricities of genius, such as exhibits of a model of a field-battery made from beef bones of the soldiers' rations, or a walking-stick composed of newspapers, there is a steady and well-marked advance in the matter of design and taste, and although some of the most elaborate articles are sent by London workmen, the contributions of the locality are very creditable. Amongst the latter, Mr. Hutt, of Richmond, is conspicuous for his invention for curing smoky chimneys, a wind-guard, and a new mechanical blind; and Mr. Pennington for a series of baths and lavatories. A notable feature in the artistic devices (B) is the exhibit of Mr. Duppa-Crotch, in the shape of a case containing silver clasp, pendant, teaspoons, and rings, hammered and home made, also one of spoons and salt-cellars, beaten out of old dollars. The ornamentation is Danish in character, and the fineness of the workmanship is remarkable. There is some excellent work in Class V. (wood-carving and turnery), to which Mr. Aumonier contributes some oak pilasters and panels; and Messrs. Halloway, carved chimney-pieces and Chippendale chairs. The number of exhibitors in textile fabrics and fancy work is very large, and embraces every variety of skilful fingership, from a plain pair of knitted cuffs to the most elaborate imitation lace. It may be mentioned, too, that the Loan department contains many valuable exhibits of point and other laces, together with some very rich old-fashioned embroideries in silk and satin. A hand-worked counterpane, in colours and gold, of the beginning of the last century, from Thrybergh Park, Cumberland, sent by Mrs. Fullerton, is a beautiful example of what our great-great-grandmothers could do. The judges of this department, who are Lady Charlotte Schreiber and Lady Marian Alford, had their hands tolerably full, as far as the plethora of needlework indicates. Musical art is represented by Messrs. Hill & Son, who have generously built a very pretty organ specially for the occasion, on which recitals are daily given by the organists, amateur and professional, of the neighbourhood; by Mr. Timberley, a builder, of Surbiton, who has sent a small chancel organ, entirely his own workmanship,—case, pipes, and decorations, and although it would not be fair to compare it with the work of professed organ-builders, it is well worthy of special mention. Messrs. Brinsmead show one of their grand pianos, with *sostenuto* pedal, and which, it is almost needless to say, is worthy in tone and appearance of the house from which it comes.

The Plumbers' Company.—At a quarterly meeting of the Court of the Plumbers' Company, held on the 25th inst., present the Master, W. Digby Seymour, Q.C., LL.D.; Mr. Charles Hudson, Warden; Mr. Samuel Tilly, Renter Warden; and Messrs. Dent, Shaw, Cook, and Taylor, assistants; it was moved by Mr. Shaw, seconded by Mr. Dent, and unanimously carried:—"That the company do contribute the annual sum of 50*l.* in aid of the object of the City and Guilds of London Institute for the Advancement of Technical Education, for a period of five years."

ELECTRIC LIGHTING APPLIED TO BUILDINGS.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A PAPER, of which the following is an abstract, on "Electric Lighting applied to Buildings," was read by Mr. John Slater, B.A., Associate, at the meeting of this Institute on Monday evening last.

The author commenced by observing that an architect was nowadays compelled to have a much wider range of knowledge than would have sufficed for him a generation or two ago. This was particularly the case with scientific subjects, as no one could tell how industrial arts or manufactures might be affected by scientific discoveries. Hence an architect was bound to take an interest in such subjects as soon as they appeared likely to have a practical bearing on his work. Electric lighting was precisely such a subject, and the object of this paper would be to show how the architect might hope to take advantage of the discovery in his buildings and use it with success. The main divisions of the subject would be the following:—

1. The means of producing the electricity.
2. The various systems of electric lighting in practical use.
3. The effects and advantages of the light.
4. The cost of producing it.

After giving a short history of the invention, and describing the first discovery by Davy of the light between carbon points, Mr. Slater showed that so long as batteries offered the only means of producing the electricity, the cost of the electric light was practically prohibitive, and for many years it remained nothing but a striking and beautiful experiment. Faraday's discovery of induced magnetism in 1830 was a great step in advance, and this led to the invention of the electro-motor machines of Nollet and Holmes, which were speedily utilised for the production of the electric light for coast illumination; these machines were called magneto-electric, and in their construction permanent steel magnets were used. The more recent machines were of the type called dynamo-electric, in which permanent magnets were replaced by small electro-magnets, and the invention of these machines was the result of the discovery made in 1867 by Dr. Werner Siemens, Sir C. Wheatstone, and Mr. Varley simultaneously, that feeble currents could be induced in a coil of wire by the residual magnetism in any piece of soft iron that had once been magnetised, and that such currents could be made to re-act on the iron, and thus again on the coil, until they gradually augmented the strength of the magnetic field, and with it the intensity of the current in the coil until it reached a very high pitch. After alluding to the various dynamo machines which had been invented, and stating that the two most extensively used in this country were the Siemens and the Gramme, Mr. Slater gave a general account of the latter, which was illustrated by diagrams. The Brush machine was then referred to as being capable of sustaining as many as sixteen lights in one circuit; while the Bürgin, though the last invented, appeared likely to become a formidable rival to the Gramme. Before leaving this branch of the subject, it was necessary to discuss the question of the best and cheapest means of obtaining the motive power for driving the electrical machines, and a comparison was instituted between water-power, steam, and gas.

With reference to the second part of his subject, the author remarked that the various systems of electric lighting could be broadly divided into two groups,—the arc-light systems and the incandescent systems, while these also in turn could each be divided into two branches, viz., the systems of using arc lighting alternating currents, and those using continuous currents; and the quasi-incandescent, and the incandescent proper. The Jablochkoff lamp was selected for description as using alternating currents; and the Crompton regulator-lamp as using continuous currents, which description would apply, with slight variations, to the other regulator-lamps, such as the Serrin, Brush, Siemens, &c. The necessity of burning good carbons was then alluded to, and reference made to the various makers. Of the quasi-incandescent lamps, the Werdermann was described, but it was stated that till quite recently the applications of this system had been so few that it could hardly be said to have passed the experimental stage. Within the last few weeks, however, a lamp invented by Mr. H. F. Joel had been brought into public notice, which was a vast improvement on anything that had previously been done in this system of lighting. The peculiar feature of this lamp was that one of the electrodes was of copper. This lamp was superior in brilliancy to any of the incandescent lamps, and almost equally steady; while its mechanism was such that any one could handle it without difficulty or risk. A number of the lamps could be burnt in one circuit. It had, however, the drawback of being rather wasteful of current. The principal incandescent systems were then alluded to, viz.,—those of Edison, Sawyer-Mann, Lane-Fox, and Swan, and Mr. Slater observed, after paying a warm tribute of admiration to the inventive genius displayed in many forms by the mechanician of Menlo Park (Edison), that it was much to be regretted that his admirers were unable to restrain within due limits the enthusiasm with which his achievements had inspired them, as there was certainly no real reason for the most extraordinary depreciation of gas-shares which ensued upon the receipt of various telegrams from America reporting the success which had attended Mr. Edison's experiments. The lamp selected for detailed description was the one invented by Mr. Swan, of Newcastle, and its simplicity, steadiness, and cheapness, were pointed out, the author observing that he was confident that if electricity was to be applied to our private houses for lighting purposes, it would be in some such form as this, as no one could desire a more beautiful light.

With reference to the third point, viz., the applications of the electric light, Mr. Slater observed that these were so numerous and of so varied a nature that it would be impossible to discuss them all, and he should therefore omit all reference to its use in public streets, lighthouses, vessels of war, mines, or for military purposes and marine signalling, and should confine his remarks to its advantages in buildings and for building operations. In the latter case the architect had here ready to his hand the means of carrying out important building operations in little more than half the time usually required, and the superiority of the use of electricity over that of large flaring gas-lights was conspicuous; although engineers were more likely to avail themselves of the light for such purposes than architects, yet it supplied a great want for both. But architects were chiefly concerned with the interiors of buildings. The conditions necessary to be observed for the effectual artificial illumination of an interior were not so simple as might be imagined, and varied in particular cases. A concentrated light was required in some cases, in others a diffused one, the latter being of much the more frequent occurrence, and as a general rule it might be laid down that the nearer we were able to approach to the effect of natural daylight in our artificial illumination the better it would be. The electric light had been shown by the spectrum analysis to be precisely similar in composition to sunlight. The question of suitable reflectors was then touched upon, and Mr. Slater observed that if one of the arc regulator lamps were hung a few feet away from the ceiling of a room, and the light, although itself hidden, were reflected upwards on the white surface of the ceiling, the result would be a diffused light over the whole room, much more agreeable than that given by the lamp itself. Some such system as this had been adopted at the station of the Chemin de Fer du Nord in Paris, and at the Picton Reading-room in Liverpool, but such an application had not yet apparently become general. The advantages of the electric light over gas or oil were then enumerated:—First, as to illuminating power. The result of experiments made at the South Foreland Lighthouse showed that the electric light there displayed was equal to 8·31 times the light of the large six-wick Trinity oil lamp, which itself was equal to 722 candles, so that this would give 6,000 candles as the value of the light. The various arc lights in general use varied from 2,000 to 8,000 candles; the Jablochkoff lamp varied from 300 to 450 candles; Mr. Swan's little lamps equalled thirty to forty. The unsatisfactory nature of candle measurement was noticed, and a new method of measuring the intensity of the light by the area illuminated to a certain standard was alluded to, and details were given of the result of such a test when applied to various lights. Second, as to quality. Every one was aware that in gas-light the yellow rays predominated so largely that it was impossible to distinguish blues, greens, and other delicate tints; consequently it was imperative that the decoration of rooms for use at night should be in strong colours not suitable for daylight. The reason for the excess of yellow in gas-light was shortly stated. The invisible radiation in burning gas was very great, whereas it was very slight in the electric light, where the heat at the carbon points was so intense that all the colours of the spectrum were produced, the result being a light of great purity and whiteness. Hence its value for shops and factories where coloured goods had to be examined and sorted; also for picture galleries, while if its use became general ceilings would not become blackened nor decorations tarnished, and the danger of fire would be reduced to a minimum. As so little heat was radiated into the air with the electric light, the temperature in its neighbourhood was but slightly raised, so that all rooms would be much cooler than under the present system of lighting. Calculations were given showing that one of the large arc lights of 4,000 candle-power radiated rather less heat into a room than one good gas-burner of fifteen candle-power. It was unnecessary to dilate upon the great advantage of this in public assembly-rooms. Although as yet but few experiments had been made with a view of determining the effect of electric lighting on the acoustic properties of a room, it would probably be found that these would be greatly improved. Professor Tyndall had ascertained that waves of sound were interfered with far more when they had to pass through atmospheres of differing densities than when such variations did not exist. The heated currents of air in a gas-lighted concert-room must necessarily cause the formation of strata of varying densities, and this was probably the cause of the complaints which were occasionally made of the different acoustic properties of a room when used at night and in the daytime; so that in electricity the architect would probably find a valuable acoustic ally. The proper ventilation of rooms was next alluded to. Public rooms, particularly when used for large assemblies by gas-light, were always difficult to ventilate adequately. Besides the oxygen consumed by the audience, there was the abstraction from the air of the oxygen required to support the combustion of the gas. With electric lighting the conditions were quite different; the light was equally brilliant in a vacuum as in the air, and no oxygen at all was consumed by the glowing filament of carbon of the incandescent systems. There was a slight consumption of oxygen with the large arc lights, but careful calculations showed that a large arc light of 4,000 candles nominal power would abstract from the air in three hours only about 6 cubic feet of oxygen, while gas-burners giving the same amount of light would in the same time consume 4,680 cubic feet of oxygen, or about 780 times as much as the electric light abstracts. This showed how vastly more simple became the problem of securing the efficient ventilation of a room when this enormous consumption of oxygen was got rid of, as the air would not require renewal so frequently, and, therefore, fresh air could be introduced much more slowly, and draughts would be diminished. Equally beneficial results would attend the introduction of the electric light into private houses, workshops, factories, &c., and the sanitary condition of the workpeople and others employed would be materially improved. It was natural that objections should be urged against the light. It was asserted to be flickering and too white, but it was shown that the flickering had been largely overcome in the later inventions; and as to its whiteness, no light was intended to be itself looked at, but to enable other things to be seen, and the whiteness could at any time be obviated by using coloured glass shades. The risk of accident was then alluded to, but Mr. Slater said he considered the risk infinitesimal and far less than that attaching to gas-lighting. Allusion was made to the recent burning of the Opera House at Nice, in which case great loss of life would have been avoided had there been a separate source of light besides gas, for it was the sudden extinguishing of all the light at the first explosion that caused the panic, which led to more deaths from suffocation than from burning. A formidable indictment could be framed against gas on the score of explosions, leaky pipes, frozen meters, &c., from which drawbacks the electric light was free, so that the slight objections against the latter, which were in many cases more ideal than real, seemed far outweighed by its numerous and great advantages.

The question of the cost of the electric light was a very important one. Much depended on the motive-power used for generating the electricity. When water-power was available the cost would be extraordinarily low. Steam-power came next in order of economy, and a gas-engine was the most expensive. Details were given of various experiments, from which it was deduced that, with a good steam-engine, a light of 204 candles could be obtained for every pound of coal consumed; while, if the same light were obtained by turning coal into gas, even allowing for the return, as coke, &c., of half the amount of coal used, nearly 8 lb. of coal would be required, so that electricity was eight times as cheap as gas. If electricity were generated by a gas-engine the saving would be in the proportion of about 5·3 to 1. Various details were quoted of the actual cost of the light at the Albert Hall, British Museum, Alexandra Palace, and other places. The various incandescent systems had not been tried long enough to enable details to be given; but the improvements made all along the line during the past year warranted the indulgence of a confident expectation that the cost would still diminish. The author then discussed the possibility of architects being able now to avail themselves of the electric light, and instanced the case of large country mansions, factories, hospitals, and other such institutions, where electric lighting could be established at less cost than gas-lighting. The difficulties in the way of lighting a large number of private houses were much greater, as the question of distributing and measuring the electricity could hardly yet be said to be settled, but the efforts of Mr. Lane-Fox, Mr. Edison, and Mr. Swan, in this direction would probably soon be successful. It was, however, absurd to predict the arrival of a day when the last gas-tap would be turned off for good, as such an invention as gas could never become useless or unnecessary; but for the production of an almost perfect light, under certain conditions, gas could never hope to rival its brilliant compeer. Mr. Slater concluded his paper thus:—"Although it is eighty years since science gave us this brilliant means of illumination, and fifty years since she supplemented that gift with another, enabling us to do away with the old and cumbrous means of producing it, it is only within the last few years that any progress had been made in the industrial application of the discovery; but during that time the advance has been so rapid, and the improvements in every direction so great, that he would be a bold man who should predict a limit to its future possibilities."

Some notes of the discussion that ensued are given in another column.

GOVERNMENT ARCHITECTS IN GERMANY.

An official contradiction has been published in Berlin of the statement appearing in various German papers which had announced that the Prussian Government was offering additional advantages in order to induce a larger number of students to take up the career of Government architect. The official organs, on the contrary, point out that so far from there being any want of candidates, there is and has been for many years a great superfluity of them. The Prussian Government found it necessary, several years ago, to warn students against devoting themselves to this career, inasmuch as there was no prospect of their obtaining the object of their ambition for many years. In proof of this the Government papers publish certain rather striking figures. It appears that, in the eleven years from 1870 to 1880 (both inclusive) as many as 900 gentlemen who had passed all the State examinations in architecture were appointed Government architects; but the appointments have hitherto brought most of these gentlemen nothing more than an empty title. Out of the 900, nearly 700 are still waiting to receive their first appointment to a fixed and salaried post. The vacancies which have occurred during the interval in question have only permitted about 200 to be taken on the paid staff. The average number of vacancies annually occurring is little more than twenty, while the candidates who have passed the State examination have for many years been four times that number. Indeed, for the past four years they have exceeded five times that number, and are still increasing. The Government service is, in fact, over-stocked, and the experience of most of the candidates of recent years has been that of bitter disappointment.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

OBITUARY.—ELECTRIC LIGHTING.

At the ordinary general meeting of this Institute, held on Monday evening last, Mr. John Whichcord, President, in the chair,

The Secretary (Mr. William H. White) announced the decease of M. G. J. Davioud, Honorary and Corresponding Member, Paris; of the Rev. Dr. Burgess, Hon. Member; and of Mr. William Burges, A.R.A., Fellow.

The Chairman announced that the memorial brass that is to be laid in Westminster Abbey over the grave of Sir Gilbert Scott, past-president of the Institute, is now on view at the Architectural Museum, Tufton-street, Westminster.

Mr. Street, R.A., said he thought it was desirable that a little more attention should be called to the loss which the profession had sustained than was given by the short announcement made by the secretary. He was sorry that some of the more intimate friends of Mr. Burges were not present. He knew him very well for a great many years. They practically commenced life together, being opponents at first with regard to the Lille Cathedral competition, but they were the best of friends afterwards. Everybody who knew Mr. Burges knew that, although he had not an enormous quantity of work to do, all that he did was full of interest to his professional brethren. His knowledge, antiquarian and other, was very great. This knowledge was shown in two most important communications from him which appeared some years ago in the "Annales Archéologiques,"—one on the great hall at Padua, and one on the Ducal Palace at Venice. Both of them were communications which did honour not only to their writer, but to the profession and the Institute. It was only due to the memory of a man of such exceptional skill and architectural taste that the announcement of the sad event of his death should not be allowed to pass without some short notice of his career.

Mr. Arthur Cates also added a few words of regret at the death of Mr. Burges and of the Rev. Dr. Burgess, observing that the last-named had in the kindest way, on very many occasions, instructed the members of the Institute as to the results of his archæological investigations in Rome, Constantinople, and elsewhere.

The Chairman said that the only reason why he did not elaborate from the chair on the short announcement of the death of the distinguished members, was that he should have been anticipating the more careful biographical notices which, in the usual course of events, would be presented from the Council. He was quite sure that the appropriate remarks which had been made would be thoroughly endorsed by all who had heard them.

The Secretary having read a long list of gentlemen desirous of becoming members of the Institute,

Mr. John Slater, B.A., Associate, delivered a very interesting lecture on electric lighting as applied to buildings. We give an abstract of it on another page, and may precede the following brief notes of the discussion by saying that the Crompton light (exhibited in the dome), the Joel lights (five in number, arranged round the room), and the Swan lamps (eight in number, suspended in a row from a wire stretched across one corner of the room), were each and all very successful, considering the fact that the lecturer and his assistants had only had an hour or two immediately prior to the commencement of the meeting in which to fix the lamps and make the necessary connexions. The electricity required for maintaining the currents was induced by a Gramme machine and a Siemens machine, both worked by a six-horse power "Otto" silent gas-engine, lent for the occasion by Messrs. Crossley Bros., and kindly accommodated in Mr. Boyd's new premises in Maddox-street for the Museum of Building Appliances. The Crompton light, a very powerful one, made the Institute meeting-room lighter than it generally is during day-time, and although the room is provided with one of Mr. Sugg's very powerful gas-burners, when the Crompton light was extinguished and the gas turned on (both operations being performed simultaneously), the difference between the two modes of lighting was strikingly apparent. The brightness almost of sunshine was exchanged for a (by contrast) murky, dingy, yellow light, although, be it observed, an exceptionally good light for gas. The "Joel" lights are much smaller, but gave, all things considered, a remarkably steady and soft light. One of these lights would not be too powerful for an ordinary-sized room. The Swan lamps, which have been previously described by us, excited much admiration.

The chairman, in inviting discussion, said it was long since they had had a more brilliant subject before them, or one which had been so brilliantly treated of as by Mr. Slater.

Dr. Hopkinson, F.R.S., of Glasgow, said that Mr. Slater had alluded to some experiments which were made in Glasgow some time ago, but those experiments were made under considerable disadvantages, at a public exhibition, and were therefore not so complete as could be wished. The result of those experiments, however, broadly stated, might be put in this way: making use of the plant which Mr. Crompton had there, with the Gramme machine, they obtained a light of over 2,000 candle-power, measured in a horizontal direction (not the most favourable), at an expenditure of about four-horse power. Of that horse-power, something less than half would be actually developed in the arc itself. Dr. Hopkinson, having alluded to some interesting experiments made by himself and Captain Abney as to the effect of the blue and red rays of the electric light on the eyes of people reading or working by it, observed that though, of course, the electric light did not vitiate the air to anything like the extent that gas did, the arc lights did give off a certain amount of nitrous compounds which might be deleterious under certain circumstances. One economy of electric lighting not much taken into account was the saving that would be effected by its use in the preservation of ceilings, walls, and furniture from the blackening action of gas.

Mr. Lane-Fox said that to him and to other electricians who were working at this problem of electric lighting, the way in which Mr. Slater's lecture had been received by the body of professional men to whom he was then speaking, and to whom the subject was one of almost immediate importance, was very encouraging. The subject of electric lighting was a very new one, but in the short time within which it had been practically possible to adopt electric lighting on a large scale, great strides had been made, and improvements were daily being made, so that no amount of disbelief in the capabilities of the electric light would retard the progress of that means of lighting. Although the problem of applying the electric light for ordinary domestic use in the houses of the people had not yet been solved, he believed that its solution was not only practicable, but not very far off. It was as easy, and easier, to distribute supplies of electric light than to distribute gas.

Mr. Horace Jones detailed some of the difficulties which he and the Markets Committee of the Corporation had met with some time ago in applying the electric light at Billingsgate Market, and expressed the opinion that such an undertaking might be taken in hand now with far greater prospects of success. He asked, however, whether it was not possible that, by the progress of invention and discovery, some more powerful batteries than those already known might be devised, so as to obviate the necessity of having such cumbrous appurtenances to the electric light as steam or gas engines.

Mr. Crompton said that Mr. Slater had treated his subject very ably. As to the question of batteries, to adopt them would be to take a step backwards. When electricity was only producible on a practicable scale from batteries, it was too expensive as an agent for lighting. It was only when electricians were able to turn to their good servant Steam that they were able to produce the electric light with economy. The great "philosopher's stone" which electricians were now seeking was a sort of reservoir of electric force,—in other words, a storage power which should be to electricity what a gasometer is to gas. When such a reservoir of electric force had been produced, it would, of course, greatly facilitate the distribution of electricity for lighting purposes, and would render it unnecessary for the user of the electric light to find room for steam-engine and electro-dynamic machines.

Mr. Ratcliff Ward, engineer to the British Electric Light Company, said that the lamp used in the Picton Reading-room, at Liverpool, was not the Jablochkoff, but the Serrin.

Mr. Ewan Christian read some extracts from a letter received from a nephew of his who is in practice as an architect at Detroit, U.S.A. Although, according to Mr. Christian, Detroit

is so slow-going and cautious a place (for America, that is) as to have earned the *sobriquet* of "Old Fogey," it would seem that the streets of that city are generally lighted by electricity, and that the electric light is being largely introduced into houses at a cost of about one-third that of gas in the same city. The telephone also appears to be in very general use.

Mr. Street, R.A., observed that the great barrier which had prevented himself and other architects from adopting the electric light in their buildings was the want of steadiness in the light. He was very desirous to see picture galleries, museums, and other buildings illuminated by the electric light, but if architects did not at present rush into the arms of electricians for the electric light, it was because they were hoping that in the next three months or so the obvious imperfections of the light would be remedied. At the new Courts of Justice, for instance, they were absolutely waiting, and holding the question of lighting in suspension as long as possible, to see what more could be done by electric lighting than was yet possible. There was a big building to light with electricity as soon as electricians could produce a steady light.

Mr. Le Fèvre, an electrical engineer of Paris, referred in hopeful terms to the possibility of an almost immediate and complete realisation of success in electric lighting, and referred to the Joel lamp as a very marked step in advance.

Mr. Slater briefly replied, observing that he had no interest whatever (except as an architect and as one of the public) in any of the methods of electric lighting, and had treated the subject not *qud* electrician, but *qud* architect. Electric lighting was yet in its infancy, but great improvements were being made daily, and it was, therefore, not unsafe to predict for it a great and not very remote future.

THE SCHINKEL CENTENARY.

THE Schinkel Centenary was celebrated on the 13th inst. at Berlin, under the auspices of the Berlin Society of Architects and the Technical High School. The name of Schinkel is revered in Germany as that of the renovator of architecture, and as the greatest architectural genius the Teutonic empire has ever produced. On the day in question, the bronze statue of Schinkel, which stands on the Schinkel Platz, in Berlin, was festively decorated with laurel wreaths and evergreen garlands, while festoons were hung from the Schinkel statue to the neighbouring statues of Beuth and Thaer. Above the statue a light and graceful awning had been erected, spreading out into a sort of open tent, in front of which were two Venetian masts, each bearing a tablet with an inscription announcing respectively the date of the birth and of the death of the hero of the commemoration. At the little town of Neuruppin, as we may parenthetically observe, the foundation-stone of a new bronze monument to Schinkel was laid on the same day, the inhabitants of that place being very proud of the great architect as its most distinguished son. In Berlin the festival commenced by the representatives of numerous architectural societies and the students of the technical schools assembling in a semicircle about the monument. Here a short address was delivered by Herr Grapow, expressing the sentiments of the students that day in reference to the great Reformer of German Architecture. At the conclusion of his address, the speaker, in the name of the Berlin Technical High School, deposited at the foot of the monument a splendid wreath of laurel. He was followed, one after another, by a long succession of gentlemen who had been deputed to represent the various architectural clubs and societies throughout Germany at the festival. Each deputy in turn addressed a few words to the assembly, and concluded by depositing, in the name of the association he represented, a laurel wreath at the foot of the statue. In the end, the whole of the steps and lower portions of the monument were literally smothered in these evergreen tokens of admiration. The proceedings at the statue terminated with the performance of an anthem sung by the members of a local choral society. The assemblage now formed in procession, and, preceded by a band with music playing and banners flying, marched through the streets of the capital to the Berlin Town-hall, where the celebration was continued by a festival address, with music, in the large hall. We may mention that the walls of the ante-rooms were covered with a number of Schinkel's original drawings, including the designs for the monument to Frederick the Great, the Royal Castle on the Acropolis at Athens, the Orianda, and the frescoes in the Berlin Museum. At the foot of the platform, which was occupied by the chorus of the Royal High School of Music, stood a colossal bust of Schinkel, crowned with laurel, and embowered in palms and other hot-house and exotic plants. The great hall was completely filled by a distinguished company, including the ministers Puttkamer, Maybach, and Falk, the Governor of Berlin, various generals and members of the aristocracy, besides numerous artists and students, together with a large number of ladies.

Professor Wiebe, the rector of the Technical High School, briefly welcomed the assemblage, expressing the pleasure he felt in doing so, as head of the new institute, which combined the *Bau-Akademie* and the *Gewerbe-Akademie*, over the first of which Schinkel himself had formerly presided, and in which position he had done much not only for architecture, but also for the art industry of Germany generally. Hereupon the choir performed two of Schinkel's most favourite pieces of music, the Chorus of Spirits, from Glück's "Orpheus," and the overture to the "Iphigenia in Aulis." After this the festival address was delivered by Professor Adler. He said that Schinkel was great as a man as well as an architect and artist. He united in himself the highest artistic qualities with the manly virtues of his race. He was, in the highest degree, industrious, simple, modest, and ever aiming to realise a higher ideal. Schinkel's master, Frederick Gilly, was a landscape and figure draughtsman of talent. He was an admirer of Classical architecture, and, early as he died, his influence on his pupil appears to have been most salutary and stimulating. Schinkel spent two years, 1803 to 1805, in Italy. The following ten years was the period of the wars with Napoleon, a period in which Schinkel was restlessly active in his professional career and studies. In 1810 he became a member of the highest architectural body in the country. After the wars were over, Schinkel was called on, as artist and architect, to carry out a number of great works, including monuments to generals, and in memory of battles, the Palace Bridge, the New Guard House, and the Kreuzberg Monument. After these, he built the great Schauspielhaus and the Berlin Museum. Subsequently to this, in co-operation with Prince Frederick William, he prepared the designs for the monument to Frederick the Great, of which six have been published. They are compositions in the Greek Renaissance style. Afterwards he prepared his drawings for the frescoes for the entrance-hall of the Berlin Museum, and the 'Flower of Greece," together with the charming Charlottenhof. Among his latest works were the plans for two churches for the Royal Castle on the Acropolis at Athens, and for the Imperial Summer Palace of Orianda in the Crimea. The speaker referred to Schinkel's other works, his tombs, theatre decorations, landscapes, and designs for objects of art industry. His "Patterns for Manufacturers and Artisans" have had an important effect on the art industry of Germany. He projected a new hand-book of architecture on a truly gigantic scale, but the idea has remained a "torso." It was Schinkel's merit to have proposed the question as to the meaning of Greek forms of art, which led Carl Bötticher to his epoch-making investigations on the tectonic art of the Greeks. The speaker concluded by holding up Schinkel as a model for the imitation of all students of architecture, and this portion of the festival was brought to a conclusion by the performance of Beethoven's chorus from the ruins of Athens, "Deck the Altars," &c.

The festival was continued in the evening by an address delivered by Dr. Schöne, the Director of the Royal Berlin Museum, at the new Architects' Club House. The speaker pointed out the particular merits of Schinkel in reference to German architecture. Nothing, he thought, more strikingly proved the high historical importance of the man than the enthusiastic veneration in which his name was held by his admirers at the present time, nearly forty years after his death. Schinkel was far more than an architect; but it was as an architect that he was greatest. In order to define precisely the services of Schinkel, the speaker briefly glanced at the most important influences to which the art had been subject during the last hundred years. He said that the ancient monuments that had most powerfully influenced art since the time of the Renaissance, and in the last century, belonged mainly to Italy and to Southern France. Different as these monuments were amongst themselves, they presented, as a whole, a complete contrast to Christian architecture. With Winkelmann came a deeper historical study of ancient art and civilisation. The action of the Dilettanti Society of London with the copies of Hellenic and Asiatic monuments, taken by Stuart, Revett, and others, inaugurated a new epoch in the art, and the new direction was powerfully stimulated by the Attic sculptures collected by Lord Elgin, and disseminated through Europe by means of casts. It was now soon found that ancient art, which had previously been regarded as a uniform whole, presented distinct and sharply-marked divisions. The commencements of Greek architecture are still obscure, but even in the oldest ruins of temples we see that the established principle of Greek architecture, the perpendicular and horizontal style with the independent solidity of the different parts, was uniformly carried out. The different parts and ornaments appeared in typical forms. They were of limited number, but perfect in proportion and execution; so that Greek architecture had attained a height of perfection which still appeared unsurpassable. But another and most important element now influenced architecture. This was the arched and vaulted style, the origin of which cannot be traced; but which we first observe in the buildings of the Romans. This produced the greatest revolution that architecture ever experienced. Greek and the earlier Roman buildings seemed to have been erected for a race living mostly in the open air. Closed apartments are exceptional or subordinate. Later, covered buildings appear in the covered market-places, the thermæ and basilicæ. With this period came in windows, arches, and vaults, which are foreign to the Classical temple construction. These are the elements which have caused the important reaction of the internal structure upon the external forms of buildings. Thus, it was that the Greek *cella* became the very antithesis to the ecclesiastical style of architecture. With respect to Schinkel's standpoint in relation to these two poles of architecture, the speaker said that he must be regarded in the main as the reviver of the Greek style, but he was aware that a new problem was presented by the Mediæval style. In the Museum and *Bau-Akademie*, Berlin possesses two works embodying Schinkel's ideas upon that subject. The speaker, however, did not deny that there was a certain neglect of the picturesque element in Schinkel's works as compared with some creations since the Renaissance. The speaker pointed out how other architects since Schinkel had attempted to supply this deficiency, and he referred to the services in this particular of the recently-deceased German architects Heinrich Strack and Martin Gropius.

The address was followed by a banquet, and succeeded by speeches and the performance of pieces of music.

On the evening of the following day, the celebration was brought to a conclusion by the students of the Technical High School, seven hundred in number, holding a "*commers*," or convivial meeting, in the *Reichshalle*, at which some very eloquent speeches were delivered, while the quantity of beer consumed appears to have been something prodigious.

THE BAY OF NAPLES.

How many old travellers to Italy must there be who, remembering the novelty of their first visit to Naples, are astonished to hear, from their friends who visit the classic spot in the present day, of the changes that have taken place in that famous old seat of Spanish and Italian monarchs. Then, as now, the first thought, the first wonderment, was at the sight of the easily-recognised Vesuvius; the next, then as now, the wonderful National Museum, so long known as the Museo Borbonico, with its wealth of unearthed classic treasures; and perhaps the third interest, one which is not now quite so uppermost in the minds of the visitors, the fish-market and the lower portion of the town and its traditions of Masaniello's outbreak, where we used to see in all its picturesque and filthy reality the charming scene always so well portrayed at either of our great opera-houses on the rare occasions that Auber's favourite opera is performed.

In the present day, those who knew Rome and Florence more than twenty years ago are loud in their complaints of the changes, and the strangers who for the first time now visit those two cities are constantly regretting that they did not see Rome and Florence in days gone by. They have certainly much to regret, but they need not let their older friends disturb their happiness in the enjoyments which are now so liberally open to them; and, if they feel the changes in Rome and Florence oppressive, they have only to come to Naples to find everything that is agreeable in the past and a little more of what was disgusting and revolting; the dirt, the filth, is as great as ever, and the imposition, the beggary, dishonesty, and want of principle are precisely the same. Although Naples possesses the largest population of any Italian city, a population which is increasing naturally in proportion, the number of houses that of late years has been added is much less remarkable than is the case either in Rome or in Florence, and therefore the traveller who re-visits Naples after a number of years will be much less struck with the alterations in the appearance of the city than is the case in the other great cities of Italy. Certainly never in the past could the Toledo, the Via Roma of to-day, have been so inconveniently crowded as it is now at certain hours, so much so, indeed, that it is difficult to imagine how a people so given up to enjoyment can find it under circumstances so little in accordance either with comfort or even common safety. But, as in so many other Italian cities, there is a wide difference between the older and the newer portions of the town, and if the Naples of the Toledo, and the narrow by-streets, with their tall, many-balconied houses, are crowded, there is ample elbow-room in the neighbourhood of the strangers' quarter of the Chiaja. There, spacious as at all times the Chiaja was, the municipality have recently been actively at work. The charming gardens of the Villa Reale, on "the Quay," have been greatly enlarged within the last few years, and, indeed, at this moment are still in an uncompleted state, the chief improvement appearing to lie in the greatly increased width of the Quay, making it probably the broadest and finest carriage-drive in Europe, with a view over the classic Bay of Naples, to the so-often described and familiar beauties of which it adds a peculiar charm which it is no exaggeration to say is unrivalled. In fact, now that the time seems to have arrived when the prosperity of the world allows an enormous number of people to be indifferent to the cost of their enjoyment, Naples, like Nice, or Rome, or Florence, or any great Continental city, is perfectly able to supply to the pleasure-seeker every indulgence that the most luxurious of us can desire; and we must not wonder, therefore, that we hear of so many persons taking up their abode here, and hurrying away from their chilly Northern homes to a climate where, as one soon learns, cold is scarcely known, and the severities of that terrible enemy, the east wind, are confined to the mild and poetic "tramontana," wafted across mountains whose slopes are covered with the olive, the prickly pear, the aloe, the heavily-laden golden orange-trees, and the waving palm.

We fancy that the idea that the constant change of occupation of Naples from century to century has deprived it of any very remarkable special architectural features is incorrect to some extent. We have recently been struck by the largeness and fitness of the houses for the purpose of the exceedingly difficult sites on which they are built, and it is almost impossible to look up at any portion of the enormous houses in the streets without being pleased not only with the effect of the whole, but with many beautiful architectural details; and the well-proportioned rooms that one meets with in the old houses, and the almost Moorish use of coloured tiles for flooring and other purposes, oblige one to acknowledge that, even in what one is disposed to call filthy Naples, there is something to be learnt by the student of hygiene, as there is also by the Neapolitans themselves in this direction, for without a greater attention to this important question it would be scarcely a surprise to those who know Naples to hear that it had been visited by plague and desolating pestilence. But the municipality will doubtless, before long, bestir themselves. At the present moment, in the Italian Chamber, the question of the large debt of Naples is the subject of discussion, and doubtless the arrangement of this troublesome question will lead to a fresh departure in the management of the city, and before long the modern movement which, since Italy has become a united kingdom, is so noticeable throughout the peninsula, will make itself felt even more strongly than at present in the old home of King Bomba and the too-freely maligned *lazzaroni*. Wails will be heard, of course, from æsthetic quarters, and from the lips and pens of sentimentalists, who, however, are not to be found living in the old town, and who carefully avoid encountering the suggestive odours which have so long given a local *bouquet* to the streets of Naples.

Did we find the filth, which has undoubtedly to give way, coupled with a refined existence, we might have reason to sympathise with those who will regret the disappearance of the Naples such as we are all familiar with; but it is not the life of Pompeii, — bourgeois though we know it to have been, — that is to be found in Naples proper, and if another great shower from the quiet crater of Vesuvius, which curls its thick smoke far overhead, were to bury modern Naples it would scarcely reveal to the future much of interest regarding the life of the nineteenth century; indeed, the coming archæologist would very soon arrive at the conclusion that the town must have been very ill-managed, and the municipality much to blame in their arrangements.

There are critics, foreign and native, who have not disguised it as their opinion that the backward position of Italy in the present day is due to the too fast-abiding classic spirit of the descendants of the Romans; the spirit of to-day is of a very different nature, and in accordance with new needs, and Italy's only chance is to throw herself in with the new feeling which comes from the north.

In such a place as Naples, what a new nomenclature would term the unloveliness of filth is strangely out of place, and, in spite of all the charms and artistic value of contrast, cannot be excused. Why should the Bay of Naples possess one single eyesore? Why should not the authorities look forward to the time when their present strangers' quarter will stretch from Pozzuoli to Sorrento, along the whole lovely shell-shaped shore of the classic gulf from whose blue waters rose, so tradition tells us, the Goddess of Beauty herself? Perhaps in time to come such a dream will be realised, when even Terre del Annunziata will be made as beautiful as the Chiaja, and happy thousands will enjoy what now but a privileged few have within their power. But between this and then the Neapolitans have a great deal to do. Their city, in the first place, will require a very rapid and constant change of municipal authorities if the familiar proverb concerning the efficacy of new brooms be a true one. How long will it be, we wonder, before the Neapolitans will understand that simple law of Christian common sense which obliges us when we quit a house to leave it clean for the next comer? To effect such an end, how many ingrained habits will have to be uprooted? It is to the aid of education here, again, as in so many other matters, and in so many other countries, that we can look alone for help. Our progress, to be stable, must be simultaneous. We can solely expect, in the midst of what we all agree to be a material existence, a love for the beautiful to be understood to apply to everything about us, the beauty of order, of cleanliness, and of suitability, when the minds of the number are cultivated to a certain pitch, a point from which they will be willing to be led by those more worthy than themselves; and how long in classic Italy, and still more in Naples, shall we have to wait for a consummation so devoutly to be wished?

SALE OF BUILDING LAND AT LEYTONSTONE.

ON Monday evening Messrs. Protheroe & Morris offered for sale, at the Working Men's Hall, Stratford, sixty building sites, forming part of the Fillebrook Estate at Leytonstone. The estate is situated near Epping Forest, and close to the Leytonstone Railway Station. It was stated that the larger portion of the estate had already been built upon. The whole of the plots, with the exception of about six, were sold. A corner plot, having a frontage of 80 ft. to the Wallwood-road, by a depth or return frontage of 167 ft. to the Queen's-road, was sold for 250*l*. All the other lots, having frontages to the Wallwood-road of 24 ft., by a depth ranging from 142 ft. to 152 ft., were sold at prices varying from 129*l*. to 132*l*. each. The largest number of lots offered were those facing the Queen's-road, to which they have frontages of 20 ft., with a depth of 120 ft. For these sites there was a close competition,—thirty out of the entire number of thirty-four lots being sold at from 70*l*. to 83*l*. each. The remaining lots comprised sites in Wallwood-road, having frontages to that road of 20 ft., with a depth of from 170 ft. to 180 ft. They were sold at prices averaging 100*l*. each. The total proceeds of the sale amounted to upwards of 4,000*l*.

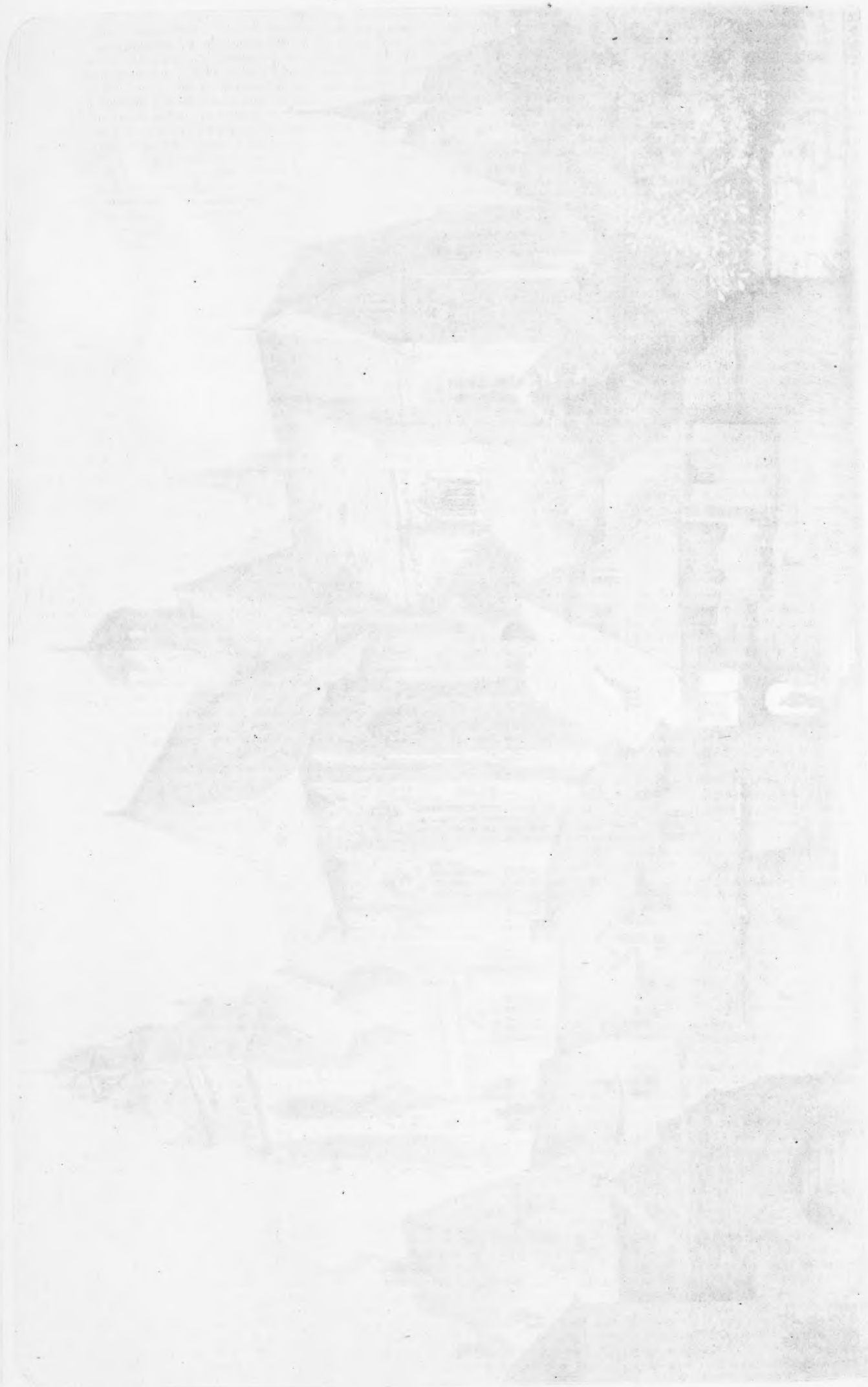
THE CHURCH OF WETZLAR.

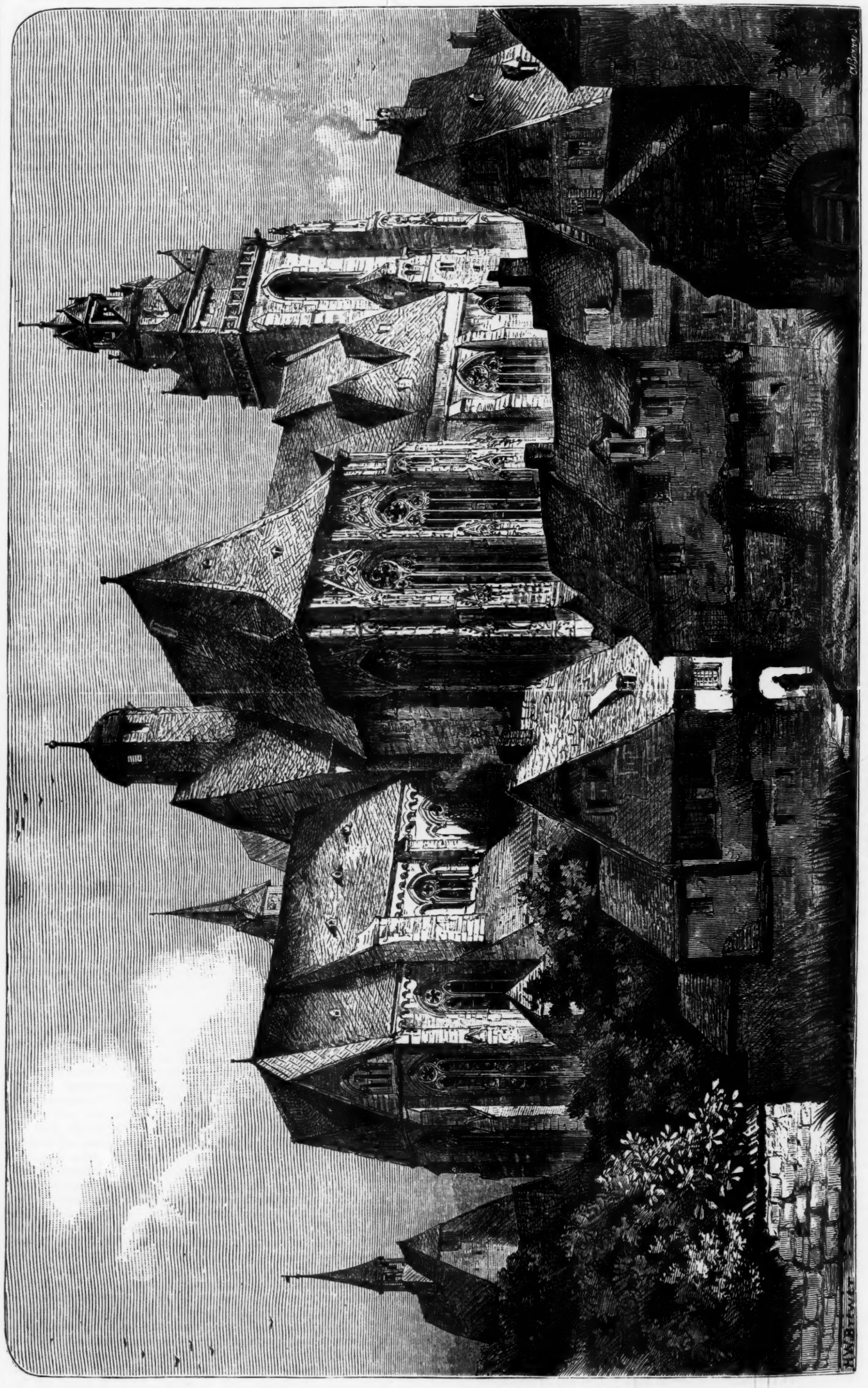
NORTH-EAST VIEW.

WE have upon a former occasion illustrated the west end of the very remarkable church of Wetzlar, in Hesse, and we then pointed out the interesting fact that it retained its eleventh-century west front behind that of the fifteenth century, which was left incomplete. We also alluded to certain peculiarities of the north side and the choir, which we will now describe more in detail, and which we shall be able to make more clear to our readers with the assistance of our illustration. The first feature which claims our attention is the apse, which is roofed in a way quite unknown in old English buildings, and very uncommon in Germany. The three sides which together form the apse have each its separate gable, forming the termination to a roof which rakes up to the central point of the principal roof. This is a far more picturesque way of treating the roof of a gabled apse than the common one which we so often see of making the gable equal in height to the ridge of the chancel roof, and then running all the roofs in at the same level, which certainly has a confused and disagreeable appearance. The apse at Wetzlar is lighted by long two-light windows, adorned with very simple but elegant Early Geometric tracery, and the gables are pierced by openings of three lights each beneath a single enclosing arch. It is curious that the outer member of each of the lights should be square-headed. This was probably done for the sake of variety. The chancel, it will be observed, is slightly wider than the apse, and is arranged as a nave and aisles, with a clearstory, —the only portion of the church which possesses the latter feature. The nave and transepts and the choir of the church at Wetzlar, as we have previously noticed, now form two distinct churches, the western being used by the Protestant inhabitants of the town, and the latter by the Roman Catholics. Of course, this arrangement only dates from the close of the sixteenth century, but there is a curious appearance about the building which would rather lead to the idea that it has always been a double church; internally it is divided into two parts by a very solid stone rood-screen, with its original altar in the centre. The upper part of the chancel arch, however, is open.

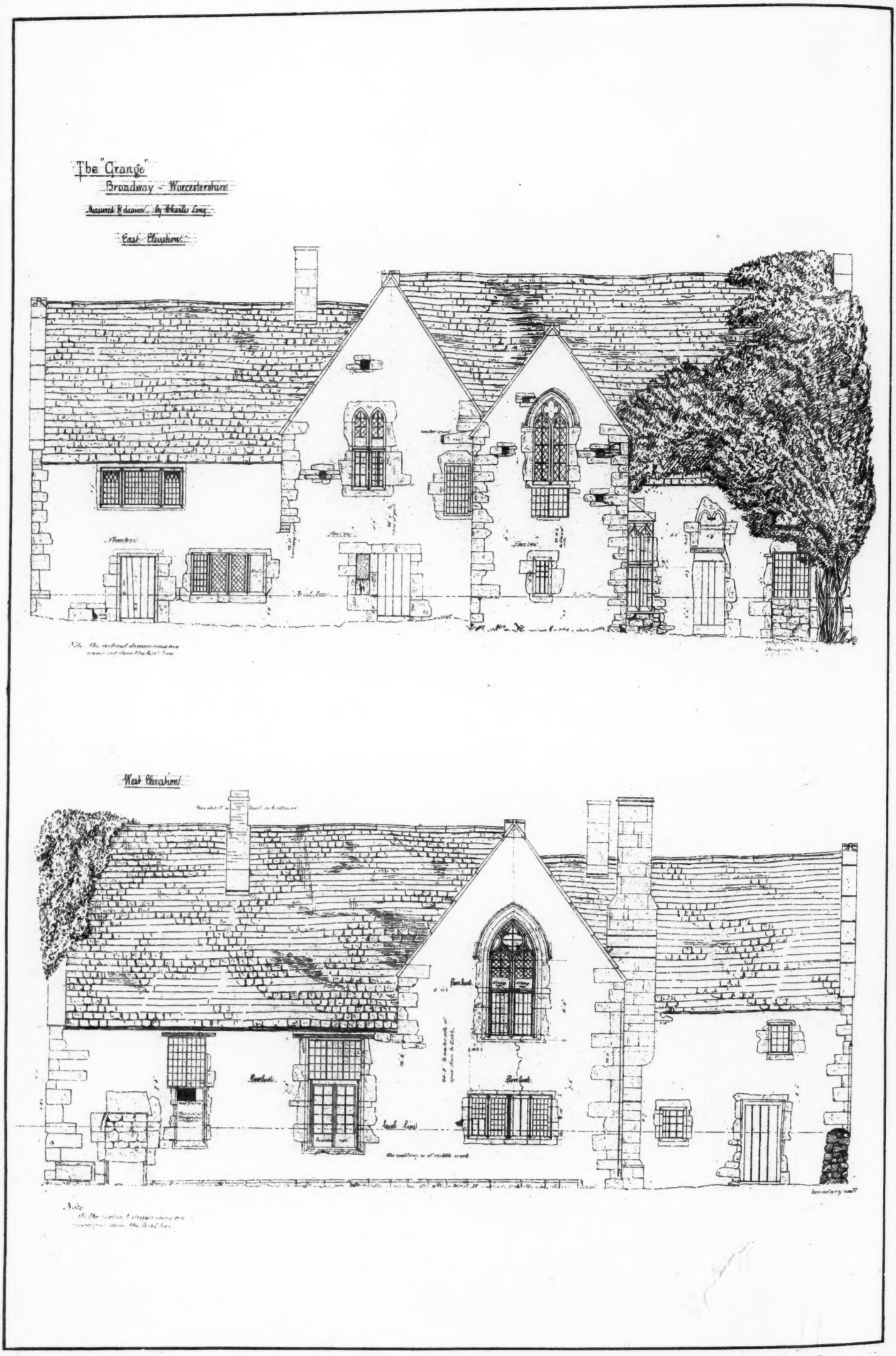
The north transept is a splendid example of fully-developed German Geometrical Decorated work, and bears such a very remarkable resemblance to the south-western tower of Cologne Cathedral that it is in all probability a work of the same architect. As will be seen from our view, it is quite unlike any other portion of the church at Wetzlar, and is evidently incomplete; from its great elaboration, it would almost seem that it must have been intended for some shrine, or dedicated to some saint for whom the people had especial devotion. There is at the present day a very remarkable "pieta" preserved here, but it is of later date than this elaborate portion of the building. Our view shows the north side of the nave, which is of plain but good Geometric work; one of the towers of the old west front; and the completed tower of the more modern west front. The view is taken from the opposite bank of the Lahn, and the church from this point looks remarkably noble, rising over the quaint gables of the houses. The little building to the east of the church appears to have been formerly a church or chapel. It is late fifteenth century, or even sixteenth century.

The Unhung at the Royal Academy.—Correspondents write in most melancholy strain as to their disappointments. We are told that there are over 1,000 works returned merely for want of room! How many have been rejected as actually unfit we cannot say. Some admirable pictures have been put back in the first class.





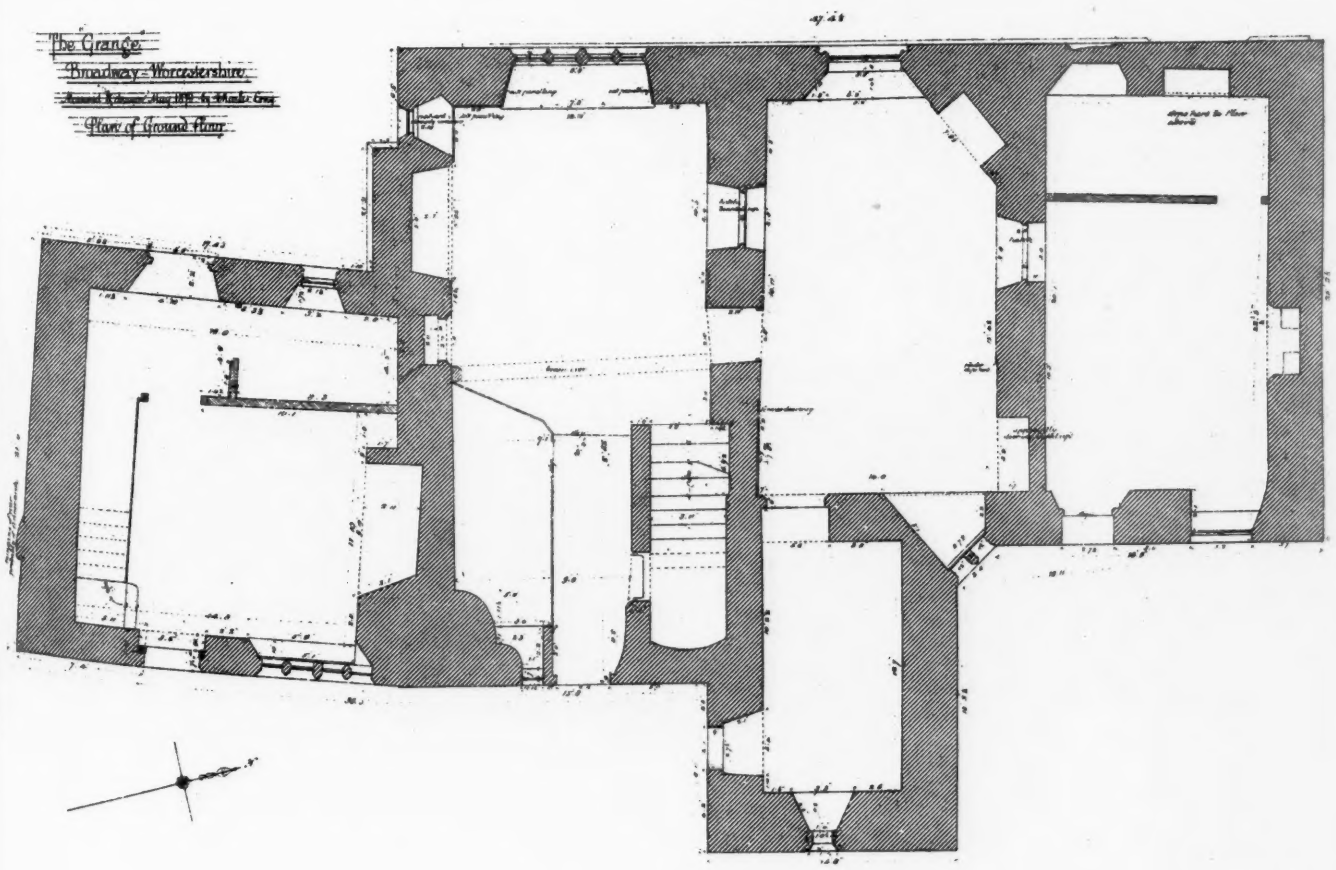
THE CHURCH OF WETZLAR, IN HESSE.



AN ABBOT'S HOUSE OF THE FOURTEENTH CENTURY, WORCESTERSHIRE.

The Grange
Broadway - Worcestershire.
Section South to North

The Grange
Broadway - Worcestershire.
Plan of Ground Floor



Whiteman & Bass, *Photo-Litho.* 236, High Holborn.

Wyman & Sons, Printers, Gt Queen St.

AN ABBOT'S HOUSE OF THE FOURTEENTH CENTURY.—*Section, and Plan of Ground Floor.*

Whiteman & Bass, *Photo-Litho* 236, High Holborn.

THE STANDARD LIFE ASSURANCE COMPANY'S NEW BUILDING, KING WILLIAM STE

Wyman & Sons, Printers, Gt Queen St

LIAM STREET, LONDON.—Mr. W. A. Boulnois and Mr. A. E. Warner, Architects.

THE GRANGE, BROADWAY, WORCESTERSHIRE.

WITHIN a short distance of the Green, in the rather more than village called Broadway, is an old building which the accompanying drawings illustrate. It is a structure of no great extent, though of much ancient interest, as formerly belonging to the abbots of Pershore, known as the Grange, and was fully described by Mr. John Robinson, of Whitehall-place, architect, to the members and visitors of the Congress held at Evesham by the British Archæological Association.

Up to the time of the Reformation this old house undoubtedly belonged to the abbots of the monastery of Pershore, who were the lords of the manor, and owned, amongst other neighbouring property, that which is now known as the Armley Bank Estate, which is still in the possession of Mr. J.O. Halliwell-Phillipps, F.R.S., the late proprietor of the famous Middle Hill Park and the Buckland domain close by. This beautifully-situated property skirts for about a mile and a half the main road on the Broadway hills leading from London to Worcester, and must have presented to the abbots in their retirement from their monastic daily duties at Pershore, many objects of interesting study in the solitude of their walks and calm contemplation of the grand natural scenery by which the whole is surrounded. It is a curious and useful fact, in connexion with early nomenclature, to notice that some of the quaint names of fields still retained at Armley Bank are to be found in the cartulary of Pershore Abbey of the fourteenth century, preserved in the Record Office, and one of the farms on the estate, now called the Bell Farm, is referred to in the same document, by the more significant and certainly more interesting name of *le Beldame*,—from which very ungrammatical Norman-French, according to our lights, the commoner term is, no doubt, corrupted.

It was Mr. Halliwell-Phillipps's original intention to have converted the Grange,—a description of which, from Mr. Robinson's account, we give,—into a private residence, but on the advice of Mr. Robinson, who thought by his doing so that the great interest of this archæological relic, in an architectural sense, would be destroyed, he has decided to restore for the same residential purpose an Elizabethan farmhouse at Armley Bank, and to keep the Grange in its present condition, with only the necessary repairs for rendering it safe from the effects of time and weather, for the investigation and study of all those lovers of antiquity who may desire to visit it, and to whom, through the owner's kindness, every facility is given for such purpose, on a written application being made to him.

This interesting relic of the fourteenth century is in a fair state of preservation, but has been much divided by floors and partitions, having been used as the workhouse and village lock-up, and subsequently let in small tenements. The ground-floor consists of the entry, the hall, and a cellar; the upper floor, of an abbot's room and an oratory; to this has been added, at a later period, probably about the middle of the fifteenth century, four other rooms. The building can be best described as being contained in three blocks. The first included the entry and the staircase, on the ground-floor, with the abbot's room over them; the second containing the hall; the third containing the cellar, on the ground floor, and the oratory over it. The entrance was probably in the position of the present doorway, and protected by a wooden porch. The entry, or small hall, is a low apartment with a window opposite the entrance; on the left is a fireplace, the only one in the building, the chimney on the exterior being carried by bold corbels. By the side of the fireplace is a small doorway, with plain chamfered jambs, with the remains of the iron pivots on which the hinges of the door were hung; whether this was an external entrance, or only a shallow cupboard, cannot at present be ascertained, as the fifteenth-century building mentioned above is built against this part of the house. On the other side of the fireplace is a small single-light window with cusped head. At the right of the entrance are the stairs up to the abbot's room and oratory, and the entrance to the hall. The hall occupies the whole height of the house, one end of it joining the block of building containing the entry and the abbot's room. It is lighted on one side by two windows of two lights each, the heads of which have been altered, and on the other side by a beautiful two-light window with cusped head and transom, set angle-ways, where the block containing the oratory joins on to the hall. This window is elegantly and picturesquely designed, and must have been a favourite nook for the retainers. The original iron guard bars are preserved. The upper part of the window appears to have been glazed, with the glass let into movable frames, and the lower part had probably shutters only, the pivots for the hinges still remaining, glass being scarce and valuable even in the fourteenth century. The end of the hall opposite to the abbot's room has two doorways, now walled up, and a doorway in each of the side walls. These doors, which were most likely shut off from the hall by a low screen, gave access, probably by covered ways, to the buttery, the pantry, and the kitchen, which latter was often built only of timber. The roof over the hall is a good specimen of Decorated timber-work. The original floor, which has been destroyed, was most likely of stone, strewed with rushes, with which were often mixed sweet herbs; there is no fireplace, as they were unusual in halls of the fourteenth century, the fire being made in the middle of the floor, so as to diffuse a general heat, while the smoke escaped through a louvre in the roof. Opening out of the hall, and under the oratory, is a small cellar. On the upper story, over the entry, is the abbot's chamber, extending the full width of the house, with an open timber roof, similar to that over the hall. This apartment is placed transversely to the hall, and has a small squint, through which the abbot could see and hear all that was going on in the hall below. There is a handsome traceried window of two lights at either end, and in the wall opposite to the hall is a closed-up doorway, which may have given access to an external staircase. The last room to be described is the oratory, which is very small, but lighted at the end by a traceried window of two lights, with a small portion of painted glass still remaining. Beneath the sill of the window was the altar, the present lights below the sill being modern. On either side is a small single-light window, and at the end next the hall is a small trefoil window, through which all could be seen that passed below.

Such is the small, but what must have been agreeable, retreat of the abbots of Pershore. The only private room was that of the abbot, the retainers sleeping in the hall, and the guests, if any, must have been accommodated in the same place, or in the stables. There are no signs that it was constructed in any way to resist an attack, and probably its only means of defence was by being surrounded by a moat.

THE STANDARD LIFE ASSURANCE OFFICES, KING WILLIAM STREET.

WE give a view of this building, now nearly completed, from the designs of Messrs. Boulnois & Warner, of Waterloo-place, Pall Mall. Not long ago (p. 167, *ante*) it was described in our columns. For convenience sake we repeat some of the particulars then given.

The building has a frontage of 102 ft. 9 in. to King William-street, extending southwards from Post Office-court (a little to the south of the Church of St. Mary Woolnoth) to Abchurch-lane, towards which last-named thoroughfare there is a return frontage of 51 ft. 8½ in. The height of the façade from the ground level to the top of the parapet is 72 ft. The building is about equally divided internally into two portions by a party-wall, it being the intention of the Company to let out as offices the northern half of the building, retaining only the southern half for their own use. The façade consists of two orders, surmounted by a cornice. The lowermost order consists of red Aberdeen granite pilasters, resting on a massive stylobate, and surmounted by moulded caps carrying a cornice,—all of the same material. This order embraces the ground and first floors. The portion of the façade between these pilasters is of Portland stone. Above the granite cornice at the level of the second floor, the whole of the façade is of Portland stone, and consists of an order of three-quarter Corinthian columns, ranging with the granite pilasters below. The return frontage to Abchurch-lane is treated in precisely the same way and in the same materials as the main frontage to King William-street. An awkwardly acute angle at the northern end of the building has been utilised for the staircase to that portion of the building which is to be let out as offices. The basement of that part of the premises to be occupied by the Company contains extensive fireproof and burglar-proof strong-rooms, fitted with iron doors by Messrs. Chubb, of St. Paul's Churchyard. The basement of this part of the building also contains a lavatory and other rooms for the clerks, and the urinals and water-closets, which are placed beneath the vaults underneath the pavement, an area, covered and top-lighted by Hamilton's prismoidal lights, intervening between them and the building. On the ground-floor is the general office of the company, entered direct from King William-street. This apartment will be 40 ft. long, and 43 ft. deep from front to back in its greatest depth. The iron column in the centre of the office is covered with scagliola by Messrs. Bellman & Ivey. The staircase to the upper floors leads up direct from the general office. On the first-floor is the Board-room, 30 ft. by 15 ft. 6 in. This apartment has (like the general office and some other apartments) a mahogany dado, and will have a mahogany chimney-piece by Messrs. Walker & Sons, of Bunhill-row. The northern half of the building shown in the view, which is to be let in floors or parts of floors as mercantile offices, is, of course, somewhat different in its arrangements. The staircase is not so wide, but has a dado of brown and green glazed tiles by Messrs. White & Co. The stoves and marble chimney-pieces throughout have been supplied by Messrs. Geo. Wright & Co., of Queen Victoria-street. The red Aberdeen granite used in the façade was supplied, worked, and polished ready for fixing by Messrs. Macdonald, Field, & Co. The gas-fitting, electric bells, and speaking-tubes (as also the hot-water heating apparatus used as an auxiliary to open fire-places in the general office of the Company) have been supplied and fixed by Messrs. Land & Co., of Stratford. The carving of the stonework of the façade has been executed by Mr. Kelsey. The floors throughout are of iron and concrete construction. The contractors are Messrs. Perry & Co., of Tredegar Works, Bow, whose foreman on the building is Mr. Wheatley. The clerk of the works is Mr. Stanley. The cost of the building will be about 30,000*l*.

RURAL WATER SUPPLY.

INSTITUTION OF SURVEYORS.

IN the course of the discussion on a paper on this subject recently read before the Institution of Surveyors by Mr. Joseph Lucas, F.G.S.,

Mr. R. B. Grantham said he understood there had been but few applications to the Local Government Board under the Water Act of 1878,—an Act which, if certain practical difficulties could be overcome, would be one of great utility. The author of the paper had dealt with the provisions of the Act in great detail, and had given some estimates of cost which could hardly be accepted as more than approximate. For instance, the cost of sinking a well might, in certain circumstances, be accurately put at 13*l*., the figure given by Mr. Lucas; but this obviously depended upon the nature of the ground in which the well was sunk, and might be very much greater for the same depth: it would also depend on the nature of the appliances required for raising and distributing the water. There were, no doubt, cases where, by combined action, scattered houses and cottages, if not too widely separated, could be supplied at 2d. per week as the minimum, and 3d. per week as the maximum; but he could hardly believe that this was possible except under favourable circumstances, as at Sir Thomas Dyke Ackland's villages, on his Devonshire estates, which were on the sandstone. Where it was necessary to sink wells in limestone or any of the hard rocks, it was very doubtful whether water could be supplied at anything like 2d. or 3d. per week per house, and the only thing to be done was to collect it in tanks or reservoirs. Tanks, he noticed, did not seem to find much favour in the author's eyes. A remark of his in a paper which he read at the Royal Institute of British Architects, as to the supply of water to country mansions, had been quoted by Mr. Lucas. It referred to the common practice of dividing tanks into two parts, so that one part might be cleaned while the other was at work. He regretted that Sir Thomas Dyke Acland was not present to explain how the villages of Doverhay, West Luccombe, and Bossington were supplied at so low a rate. Speaking from practical knowledge, he should not like to undertake to give a supply of water at so small a cost.

He had paid a visit to East Brent Knoll, and observed that an attempt was being made to collect water in tanks, or rather ponds. It appeared that since his visit Archdeacon Denison had considerably extended the scope of his operations, digging wells and sinking shafts; and he had no doubt that, looking to the geological formation of the hill, a quantity of water sufficient for the neighbourhood would be readily procured from it.

Dr. B. N. Earle said that he had been acting for the last eight or nine years in an essentially rural district, and had found a number of difficulties in the way of obtaining a supply of pure water, and one of the chiefest of these difficulties was the absence of any powers compelling people to take pure water even if supplied to them. Recent Acts went no further than enabling the authorities to close contaminated sources of supply. He was sorry to say that in no case had they been able to compel water for one cottage or private individual. In a great number of cases in the south of Hants,—and his district lay on the sands to the south, and also on the high chalk downs,—water might be obtained at something like 2d. or 3d. a week, and very pure. But in the north of the county, a good deal of the land being 200 ft. and 300 ft. above the water-bearing strata, it was a more difficult matter to obtain a supply. Things were still in an embryo state, but water had been supplied for 200 or 300 people during the last year, and, he presumed, at the rate of something like 6d. in the pound, over the district taxed for it; the purely agricultural district being charged ½d. for every 1d. on house property. It had often been asked what was a "reasonable distance" to fetch water from. The greater number of people under his charge lived a considerable distance apart. There was, probably, about one person to five acres, so that the idea of combining was impracticable. The people who suffered most were those on the high down farms with no other person within half a mile of them. A scheme had been laid before the Winchester Rural Authority, in which it was proposed to take the water from a hill 500 ft. high, which would render it possible to extend the supply to a very large area, and even serve the high down farms by bringing the water to the roads near and the neighbouring valleys. It had not been found possible, in his district, to get the prices quite down to the point mentioned in the paper. The water-tanks used in the high chalk downs seemed unsatisfactory; there was the trouble of clearing them out; and, added to this, they had great tendency to crack, and let out the water in dry seasons. They always gave in much sooner than the wells. In the village of Owlesbury, where he suggested the advisability of having waterworks, the average price of water previously to their establishment was 2d. a bucket. It took a quarter of an hour's hard labour to raise three buckets, the water being drawn up by means of a wheel, in which men had to walk. He had himself tried walking as hard as he could, and all he managed to get up in twelve minutes and a half was thirteen gallons. The water so obtained was not nearly sufficient for ordinary domestic purposes, and very commonly in dry seasons there was no water to be got except from those wells. There were three wells altogether in the place, and he reckoned that each would give thirty or forty gallons an hour. Sanitary Authorities were very averse to taking action in the matter of supplying water, though they frequently took action by closing wells. There were great difficulties in the way. The formation of watershed districts, or a combination of such districts, would probably be at once the easiest and most economical way of providing a water-supply for rural districts and isolated villages and groups of houses.

Mr. G. J. Symons, F.R.S., said that Mr. Lucas's paper contained particulars of water supply obtained at very shallow depths, and also at a low cost. He would not go the length of saying that, where they could be safely used, shallow wells were in themselves undesirable from a financial point of view, but they had to be looked after very sharply. From shallow wells came more sanitary tribulation than from any other source. The village where he lived when a boy at school, in Leicestershire, was on the ridge of a hill, and the consequence was that the wells were very deep. The Leicester Waterworks Company came into the district to take away the water by a large gravitation scheme for the supply of the town,—probably by arrangement with the landowners. Simultaneously with carrying out that scheme, which to a great extent drained the wells, a pipe was brought into the village from springs a little higher up, and stand-pipes which cost a nominal sum were put up near the cottages. No reservoir was constructed, but a pipe was laid, as in the case of the Lancaster Waterworks, into places largely provided with springs; and during the remaining time that he lived in that village, the supply of water to the stand-pipes was ample and sufficient. Considered from an engineering point of view, this scheme might have no great merits, but it cost a mere nothing, and answered very well. He did not find, on reading the paper, any reference to the question of dew ponds. There was a capital little pamphlet, of some fifty pages, written some three years ago by Mr. Slade, in which he alluded to dew ponds, or ponds which could be formed in the chalk hills, in the vicinity of the district to which Dr. Earle had referred. It showed what could be done with dew ponds, because the labour of making wells was enormous. He did not understand why wind was not more used as a motor for raising water. In the fen districts, windmills were extensively employed for driving the pumps, and he did not see why this arrangement should not be tried with these big wells in chalk districts. With some such an arrangement as "Armstrong's Accumulator," it would, he thought, be possible to store up the wind force of windy times to be available in times of calm. He had been rash enough years ago to say that the water-supply question had become a scramble between the rich and the powerful and the humbler populations, which had to take their chance. As years had gone on, this opinion of his had gathered strength. One thing much wanted was, as Mr. Lucas had said, a complete survey of the aqueous resources of the country. The present difficulty was how to get rid of water,—not to store it. There were cycles of wet seasons and cycles of dry seasons. The country was now suffering from the former, and Parliament was engaged in legislating for the diminution of floods. By and by would come dry seasons, and with them as much difficulty in getting water as there was now in getting rid of it. On the whole, there was, he thought, rather too much tendency for legislators to be led away by popular clamour. Very little consideration would convince any one that floods are not the only hydraulic irregularity requiring attention.

Mr. G. H. Leane said that reference was made in the paper to some wells sunk near the sea, and which proved to be salt. It occurred to him that it might be interesting to have on record in the Transactions of the Institution some facts relating to wells sunk in the sea from which very good water had been procured. He had, therefore, asked his friend, Mr. Hill, who had been engaged in the construction of forts at Portsmouth, to give him some details of the works. Mr. Hill's letter, written in reply to his request, and read to the meeting by Mr. Leane, contained the following passages:—

"The Sea Forts at Spithead have each of them a fresh-water well, which has been made under considerable difficulties; those of the 'Horse' and 'Norman' Forts, which are the main defences to the entrance of the port, are carried to practically the same depth from high water-mark, or about 570 ft. In both these wells the beds passed through have been of the Bracklesham series, with a little overlying recent deposit, and, in each case, the water, which was found in some sand beds as far down as 150 ft. or 200 ft. from the surface, was brackish, but beyond these depths a bed or beds of extremely solid greenish sandy clay, some 20 ft. thick, was passed through, which were impervious to, and completely shut off, the overlying brackish water.

At the Spit Fort, which is about two miles nearer the mouth of Portsmouth Harbour, the water was found at a depth of 400 ft. from high water-mark, after passing through the same beds of solid clay, and the result agrees, in the main, with calculations based upon the depth of wells in Portsmouth and Gosport, and the dip of inclination of the strata, which is pretty nearly from north to south. As you are aware, the Gosport well, which is about a mile from the sea, is something over 300 ft. deep; it passes through the same clay into the same sand, and is about 2¼ miles to the northward of the Spit Fort.

There are many brewers' wells in Portsmouth of about the depth, viz., 300 ft., and the whole of these, including those of the Sea Forts, yield a supply of excellent, though very soft, fresh water.

With regard to the level to which the water rises in these wells, I may inform you that we find those at Spithead to stand at about mid-tide level, but they rise and fall some 3 ft. or 4 ft. simultaneously with, or rather following the rise and fall of, the tide, and proportionately to its height,—that is to say, they vary a little more at the spring tides than at the neap tides; approximately, the variation in level is only about one-third of that of the tide. The water of the Gosport well, when left standing, rises to within 30 ft. of the surface of the ground, which is also somewhere about the mid-tide level, but it has not been observed to vary with the tide.

At 'St. Helens' Fort, on the Bembridge point of the Isle of Wight, a well has also been sunk, but to a depth of 170 ft. only; the beds passed through and water-bearing stratum being the more modern Bembridge series, but there, also, a sufficiency of solid clay to keep back the salt water was found overlying the water-bearing stratum; in this case also the level of the well is coincident with that of the mean tide, and varies somewhat with its rise and fall.

At Fort 'Monckton,' on the Gosport shore, near Haslar, a well is now being sunk, which at a depth of 170 feet, is still in brackish water; and I have no doubt whatever that the fresh water in this case will have to be sought at a further depth of from 170 ft. to 200 ft.

It is apparent that wells near the sea can only be successful in so far as the geological conditions are favourable to their construction; if there is a good dip of stratum from the shore seaward, and even a comparatively thin but solid bed of clay covering the shore at high water-mark, fresh water would be found at a moderate depth, but I take it, it is a *sine quâ non*, first, that there should be a dip of strata from the shore seaward; second, a sufficiently deep and extensive overlying bed of solid clay to shut out the salt water."

He did not think those wells would be classed in the 2d. a week category. He feared they would cost the country a great deal more than that, but they were of inestimable value in their particular situation.

Mr. C. E. De Rance said that he had read Mr. Lucas's paper with interest, because no one could more fully realise the crying want of a rural water supply than a geological surveyor, constantly the witness of the want of pure water, and often needing it for himself. The first impression, on reading the paper, might be that a means had been found to meet that demand; but consideration showed that this was too good to be true. Mr. Lucas had alluded to the Local Government Board allowing 8*l.* 13s. 4d. and 13*l.* for sinking wells for isolated cottages, and stated that this was too much, and that supplies from springs could be obtained at a much smaller cost, giving, as an instance, Sir Thomas Dyke Acland's water supply to his villages. He observed that one of the villages referred to was supplied by a dip-well only, others by stand-pipes, from which water had to be fetched. The 13*l.*, referred to in the paper, was, he (Mr. De Rance) understood, the cost of bringing water supply into a house. The cost of supply to mere dip-wells or stand-pipes would, of course, be much less than in the former case. The cost of a 50-ft. well in Hants was quoted in the paper as 7*l.* 10s. In the part of the North of England where he had been stationed, he was certain that 50 ft. could not be dug, and appliances found, at any such price; and he spoke from personal experience. The author had given Messrs. Legrand & Sutcliffe's schedule of prices for borings. He was aware that, in many places, the cost of making their wells was very low, and that the prices compared favourably with some others he could mention. In calculating a water-rent to produce five per cent. on prime cost, it was necessary to take into consideration something more than the expense of sinking the wells. There were other things required, such as main pipes for distributing the water, and pumps for lifting it. In some of the instances mentioned it would even be necessary, he presumed, to provide steam-engines. For instance, the Aldershot Waterworks Company supplied 1,175 houses in the year 1871; and in this case pumping was probably required, with all the resulting expense of engines and plant, coal and management, to be added to the cost of well-sinking, before calculating the water-rate, which was to yield five per cent. on the outlay. It would be interesting to learn how it was that the cost of sinking 130 ft. at Skegness amounted to so large a sum as 800*l.* Probably there were special difficulties in the case which accounted for it. Two borings of 130 ft. were given in another instance for the supply of a present population of 3,000. He assumed that, in this case also, there would be pumping and also distributing pipes. If this were so, the cost per week would be considerably higher than the decimal of a penny given in the table accompanying the paper. The author stated that tanks compared very unfavourably, as regards cost, with wells and springs; but if to this was added the cost of taking the water to the houses this disparity disappeared. He agreed with the author as to the necessity of constituting Watershed Boards. The want of such Boards was felt not only in places using surface waters, but even where wells were used; for water drawn from a source pure in itself might become suddenly polluted from some cause unpreventible without complete control of the basin. He also agreed with the author that the local authority could not be expected to make complete geological and hydraulic surveys of their district, and ought

to have access to Government information on the subject. On this head it might be useful to mention what her Majesty's Geological Survey were doing towards giving this information. First of all, there were the maps of the Ordnance Survey, coloured to represent the various subdivisions of the geological formations, with the boundary lines and faults, and the direction and amount of inclination of the strata. Maps of that character were published on the scale of 1 in. to the mile, and 6 in. to the mile; the former was nearly complete for the whole of England and Wales, the latter for the six northern counties. They were also publishing another edition, showing the actual surface soil of the country. The surface, if formed of chalk, coal measure, or other rock, is shown by its distinctive colour; if the older strata happen to be overlaid by drift clay or sand, which sometimes reaches a thickness of 100 ft., or even 300 ft., it is also shown by a distinctive colour. These surface maps were completed for the London basin and the six northern counties, and would, he thought, be of great assistance in the matter of water supply. These maps were found to be of very great use in tracing the connexion of character of soil and disease, and for agricultural purposes. For the latter object a special set of maps had been recently prepared for the Royal Agricultural Commission, of which the Duke of Richmond was the chairman. Those of the six northern counties and of Cheshire were now complete. The staff was surveying the remainder of England, and he hoped before long they would complete the whole of the country for the superficial soils. The Geological Survey, in their "Memoirs," also published the details of the wells and borings sunk in the district described; and, lately, he had been adding, in Lancashire and Cheshire, by way of addition to the ordinary geological maps, the artesian contours, or heights, to which water will rise on the strata. Some years ago, M. Delesse showed the height to which water would rise over the Paris district and other parts of France, and Mr. Lucas had done useful work in this direction over the London basin. Adding these lines to the maps of the Government Geological Survey increased their value; and Mr. Lucas, so far as he knew, was the first to commence this work in England. It must be remembered that wells can only be useful in that portion of England and Wales consisting of pervious rocks, which, he found by calculation, was 26,687 square miles. About 21,000 square miles were covered with Silurian, Devonian, and other rocks, which were absolutely impermeable. Headings driven in slate beds far into hill-sides were perfectly dry. Mr. Lucas had mentioned that he considered the rocks that were most favourable to subterranean water supply were limestone and calcareous sandstone. He should like to ask the author whether he meant for springs or wells?

Mr. Lucas replied that he meant for wells.

Mr. De Rance said that, in that case, he differed from him absolutely. It seemed to him that for sinking wells, excepting certain chalk-wells, limestone (taking, as an example, the most important, the carboniferous limestone) was the worst rock possible for the purpose, being perfectly porous, fissured, and jointed, and the water absorbed tended to form underground rivers, which either evaporated as springs or disappeared to unknown depths. All the towns in England supplied by wells and using large quantities of water derived their supply from sandstone. Birmingham, with four wells, had a yield of 9 million gallons a day; Leamington, 750,000 gallons; and Southport, 60,000 gallons from two wells; Liverpool, 6½ million gallons from six wells; Nottingham, 3¾ millions, from Bestwood Pumping Station alone. All these were from the new red sandstone and permian formations. Large quantities of water were yielded by coal-measure sandstones, which were not calcareous. In contrast to the supplies derived from sandstone were the examples given by the author of subterranean supply from calcareous rock. He found, firstly, that the yield of the well in the Cotswold District was about 900 barrels a day (about 10 hours, he supposed, representing the working day); and secondly, that of the boring at Mr. Theodore Watney's brewery, 43,000 gallons only. This was a chalk well, and he was aware that the chalk in some districts yielded a large quantity. Chalk was an exceptional case, and was a limestone of ordinary character, parting with water with great slowness. The oolitic limestones occupied some 66,000 square miles, but they were much cut up by clay beds. These beds were thin, and however few, were very valuable as the source of springs. In connexion with the salt water found at Folkestone, he might refer to some experiments made there by Isaac Roberts, a well-known contractor. Mr. Roberts had been going lately into the question of how much water sandstone would hold, and the quantity of salt that it would filter, and had been running a large quantity of it from the sea through blocks of sandstone. He found that these blocks acted as a natural filter, abstracting all the salt, so to speak, from the water, till they became supersaturated and took up no more. But fresh water passed through the blocks of supersaturated sandstone, took up the salt again, and left the rock in its original condition. This seemed to throw some light on the subject of the Liverpool wells. Some people talked of the wells near the rivers getting salt from the sea and being spoiled, but it appeared that the salt in the Liverpool wells, used for the Corporation's supply, was due to another condition of things. The six wells yielded about 1¼ million gallons a day. When one well was pumped beyond its natural capacity, the water got harder, but when it was allowed to rest, it reverted to its original softness. While the pumping was confined within the natural area the water would be soft, but the more the well was pumped below its natural level, the harder the water became, as it was drawing from a district from which all the salts had been abstracted.

Mr. Lucas, in replying on the discussion, said that surprise was expressed by Dr. Earle at the lowness of certain figures which he had given. He was not answerable for the accuracy of those figures, which were quite as astonishing to him as to any other practical man. Reference had been made to the large wheels used in Hampshire for raising water, which were turned by some one walking inside them. It was curious to note that wheels of the kind were never met with in Surrey. The most easterly he had seen was at Sheephouse Farm. It must not be supposed that he was an advocate of shallow wells; but it was advisable, in writing a paper on this subject, to place on record the cost at which such wells could be provided; and a shallow well was not necessarily impure, and, in many cases, would be sufficient to supply cottages. He quite agreed with what Mr. Symons had said with reference to floods and the storage of water. Public attention was, for the moment, concentrated on the former; but droughts would come in their turn, and the question of floods would be forgotten. Nothing was more to be deprecated than loose and unguarded utterances on these subjects in the public press. The letter which Mr. Leane had read, relating to a series of borings near the sea, he regarded as a very valuable contribution to the subject. It was incorrectly assumed by Mr. De Rance that the sum of 8*l.* 13*s.* 4*d.* was intended by the Public Health Act to cover the cost of a supply into the house. As a matter of fact, the 8*l.* 13*s.* 4*d.* might all be spent in bringing water to within a "reasonable distance" of the house. Ten inches for percolation was, he thought, very much too high. He never attempted to use a higher figure than 8 in. in the most extreme cases, generally adopting 6 in.

Mr. De Rance inquired what rocks Mr. Lucas referred to?

Mr. Lucas replied that, of course, the nature of the rock would make a difference; at present the information on the subject was very insufficient, but taking any ordinary rock, through which percolation could take place and which was covered with ordinary soil, he did not think it was safe to go above 6 in. What he meant by saying that limestone was most favourable for water was this,—the water in passing through limestone dissolved part of the rock, and for that reason percolation took place more freely in calcareous sandstone, which was particularly porous, than in sandstone, which was not calcareous. This he knew from personal experience on the Lower Greensand of Surrey, Kent, and other places where the wells gave extremely small supplies, and repeatedly disappointed people who sank them, and more especially people who bored for water. The cases in the New Red Sandstone, cited by Mr. De Rance, came under the head of large supplies, which was treated on page 169 of the paper. He had separated these cases from the others, and in his opinion the comparative abundance of their supply was due to some collection of water on the surface.

ART-UNION OF LONDON DISTRIBUTION.

The annual meeting and prize-distribution of the Art-Union of London was held on Tuesday, in the Adelphi Theatre, by the kind permission of Messrs. A. & S. Gatti. Mr. George Godwin, F.R.S., F.S.A., was called upon to preside.

Mr. J. A. Hallett, member of the Council, read the following

REPORT.

The subscription of the year just closed amounts to 11,940*l.* 1*s.* 6*d.*, a sum very nearly equal to that of last year.

The following is a brief summary of the receipts and expenditure; a detailed account will, as usual, be printed in the report.

Amount of subscriptions				£11,940	1 6
Allotted for prizes	£4,317	0	0		
Set apart towards providing works of art for accumulated payments	584	17	0		
For print of the year, almanack, exhibition, report, &c., and reserve	3,646	19	3		
				8,548	16 3
Agents' commission and charges, advertisements, printing, postage, rent, &c.				3,391	5 3
				£11,940	1 6

The amount to be expended on prizes will be thus allotted:—

1 work at	£200	
2 works at	150	each.
1 work at	100	
3 works at	75	each.
3 „	60	„
6 „	45	„
6 „	40	„
10 „	35	„
12 „	30	„
12 „	25	„
10 „	20	„
10 „	15	„
20 „	10	„

1 Water-colour Drawing, "The Revenge."
20 China Tazzas.
50 Volumes of Nine Scenes from English History.
50 Framed proofs, "Countess of Bedford."
30 Parian Statuettes, "The Little Boat-builder."
60 Portfolios of 24 Plates of Animal Life.
30 Silver Medals of the late David Cox.
Total, 547 prizes.

The accounts have been audited by Mr. J. Walker and Mr. W. Wright, to whom thanks will presently be proposed.

To the local honorary secretaries and agents, in all parts of the world, the warmest thanks are due for their zealous co-operation, without which the amount collected for the advancement of the Society's objects would show a very meagre total.

On the present occasion, we would specially name for recognition Mr. Brown, of Sydney (who has raised for the present year 230 guineas as against 83 guineas for 1880), Mr. Wright and his coadjutors in South Australia, and Messrs. Allen, of Melbourne. At the exhibition recently held in the last-named place, the reduced copy in bronze of Mr. Bell's "America," from the Albert Memorial, which had been gained as a prize by an Australian subscriber, occupied a conspicuous position, and was universally admired. It has often been remarked that a large proportion of prizes generally falls to our fellow-members at the Antipodes, and it must be allowed that the seed thus sown bears good fruit in the increased amount of subscriptions returned from that region.

The Council would here remark that it may be considered as a striking proof of the interest taken in the advancement of art that a body of gentlemen should be found, to the number of many hundreds, with ramifications in all quarters of the globe, who have, year after year, for more than forty years, devoted no small portion of time and labour to the collection and remittance to head-quarters of the funds destined to be there exchanged for art-productions of various kinds; which again, through the agency of these same gentlemen, are returned, in varied proportions, to afford art-culture in the several localities from which the funds were derived.

The Council think it well, from time to time, to urge on *all* the members the great advantage to be derived from a very moderate amount of exertion; if each subscriber could induce only one person amongst his friends and acquaintances to join the association, the result would be great.

The aims of the Art-Union may be said to extend to whatever relates to art in Britain, and it has therefore been a habit of the Council to chronicle in their annual report any movement in the direction of opening new galleries or museums, or other means of advancing the great end they have in view, as well as to note any losses the world of art may have sustained through death during the year. In recording such losses the present report has nearly as many instances to note as that of last year.

In the early part of the past year Mr. Thomas Landseer, A.E.R.A., was called away, at the advanced age of eighty-five. He was the eldest of the three brothers, Thomas, Edwin, and Charles, sons of John Landseer, an engraver, and he was amongst the earliest members of that profession admitted into the ranks of the Academy. The greatest part of his art-life was passed in transferring into black and white his brother Edwin's paintings. The first work etched by him was a bull, painted in 1811. The first plate, in the modern, or mixed, style was "Dignity and Impudence," finished in 1841. His finest plate was "The Stag at Bay," published in 1848. For the copyright of this work Sir Edwin was paid 800 guineas, as against 30 guineas, which he received for "Dignity and Impudence." With regard to "The Stag at Bay," whatever suggestion in modelling, texture, colour, and atmosphere the graver's tool can convey will be found in this marvellous work. His fame rests on performances of a similarly subtle and perfect kind, and it is pleasant to think that it will go down to posterity linked with that of his talented brother.

In August last died Mr. Thomas Henry Wyatt, architect, at the age of seventy-three. The list of Mr. Wyatt's executed works presents a formidable appearance, and compares not unfavourably with that of his colleague, the late Sir George Gilbert Scott. Amongst a long list of pupils who served their articles in his office may be mentioned

two distinguished men who preceded him to the grave,—the late Sir Digby Wyatt, his younger brother, formerly an active member of your Council, and Mr. Edward M. Barry, whose death we had to record in our last report.

In June last Mr. C. G. Lewis, engraver, died, in his seventy-third year. He had retired from the exercise of his profession for three years, after nearly fifty years of untiring labour. He was the second son of F. C. Lewis, engraver and landscape painter, and brother of the late J. F. Lewis, R.A. Amongst other well-known works he engraved several of Sir Edwin Landseer's pictures, including "Shoeing," and "The Otter Hunt," and several of Rosa Bonheur's.

In December Mr. John Cousen, landscape engraver, was taken from us. His works, after Turner, Stanfield, and others, are held in high esteem.

Mr. Alfred Elmore, R.A., died not many weeks since. Bearing in mind the terms in which the operations of the Art-Union are sometimes referred to by those from whom we might look for a juster estimate, it is interesting to observe the extent to which the late distinguished painter was aided by the working of the association. One of his earliest exhibited pictures, "Peasantry of Naples," was bought by a prizeholder in the year 1843 for 40*l.* Then followed, in 1844, "The Novice," 50*l.*, and "Italian Cornfield," 30*l.*; in 1845, "The Origin of the Feud of the Guelphs and Ghibellines," 250 guineas; in 1846, "The Fainting of Hero," 300*l.*; 1847, "Invention of the Stocking Loom," 200 guineas. Mr. Elmore had long desired that his painting of "Marie Antoinette facing the Mob at the Tuileries,"—his best picture,—should be engraved, and, not long before his death, the Council of the Art-Union, with the concurrence of Sir John Kelk, the owner of the picture, purchased the copyright, and a fine line-engraving from it is in progress, impressions from which will carry the name of the artist into every part of the world where the English language is spoken.

In the past year the Council were deprived by death of the valuable co-operation and genial companionship of Mr. James Robinson Planché, who had been, for many years, a member of their body, and whose refined taste and deep knowledge, especially in matters relating to antique armour or costume, were always invaluable. Mr. Planché wrote many charming and graceful works for the stage, and showed an admiring public how much of elegance may be infused *into*, and how much enjoyment may be extracted *from*, extravaganza and burlesque. The bright and sparkling language in which he clothed his plots,—the witty repartees and happy play on words which rippled through his dialogues,—totally devoid of vulgarity or coarseness,—are unsurpassed by cognate pieces which now hold possession of our stage.

Here we may be allowed to pay a tribute, in passing, to one who, we are glad to say, is still among us, but who has retired from a prominent position in the region of art-literature. Mr. S. C. Hall, in uttering some interesting and touching words of farewell to the public, showed how, when he started the *Art Journal*, there was literally no patronage of British art. Collectors, indeed, bought old masters with familiar names,—canvasses that had never been seen by the artists to whom they were attributed; and he showed, month after month, that a larger number of works attributed to Titian, Raffaelle, and Rubens, paid duty in a year, than those masters had produced during their lives. He has had his reward, in living to see such so-called old masters valued accordingly, and a thorough transfer of patronage to modern art. In speaking of the circumstances which encouraged him in his task, Mr. Hall justly refers to the operations of the Art-Union of London, and, in fact, it was the establishment of this society which led to the foundation of the journal, originally called the *Art-Union Journal*, and provided for its first base of operations. Mr. Hall points with just pride to the part he has taken in bringing about the association of the industrial arts with the fine arts proper, and needs no excuse, though he asks it, for seeking to show that the art spirit and character of the age have been largely served and materially advanced by the journal which he so long and so ably conducted. Mr. Hall will, we hope, be spared many years to enjoy the repose earned by forty-two years of labour for the advancement of art.

In the past month Mr. J. Prescott Knight, R.A., was removed from us; he was for a quarter of a century Secretary to the Royal Academy. He began to exhibit portraits at the Academy about 1827. In 1836 he was elected Associate, and was appointed secretary before his two years' service as a member of the Council had expired. Portrait painting was in general his *forte*. Almost the only large picture he produced was "The Saint's Day," which the Art-Union engraved as its third annual work forty years ago.

On the subject of the influence on the state of art in this country of the Art-Union of London and similar institutions, reference may be profitably made to some remarks of Mr. A. T. Kinnear, advocate, who presided at the last annual meeting of the Association for the Promotion of the Fine Arts in Scotland. Mr. Kinnear said,—If they compared the state of public opinion about art, as it was now, and as it was forty-five years ago, they would have no doubt that not only that institution, but every influence, whether embodied in an institution or not, which had for its object the diffusion, as widely as possible, of a taste for, and appreciation of, art, had been working continuously, persistently, and most successfully for the attainment of that end. At one of the earliest meetings of the Association, Mr. Kinnear remarked, Dean Ramsey, who always took great interest in its prosperity, said he had been comparing certain figures, and that, up to the ninth year of its existence, the Association had expended 30,000*l.* in the purchase of works of art in a particular year; while, before its establishment, the whole amount spent in the purchase of such works, from the Royal Scottish Academy was 30*l.*, and the sister Academy of Arts in Dublin had subsisted for four years on 30*s.* He remarked that, looking back to the earliest lists of the society's purchases, he found amongst them almost every name which the country now recognised as that of a Scottish artist who had done honour to his country.

In a similar way it may be stated, without room for contradiction, that, amongst the names of English artists now most esteemed by rightly-judging people, a very large number are indebted, in a greater or less degree, to the Art-Union of London for welcome aid, when first struggling on the lower rounds of the ladder of fame,—and, by not a few this fact is often frankly acknowledged.

For the presentation work of the coming year the Council have secured the copyright of Mr. Frith's remarkable series of pictures, "The Road to Ruin," exhibited, at the Royal Academy in 1878.

It is needless to state that the expense incurred in acquiring the copyright, engraving, and printing such a work is very great, and to give the set of five prints, in addition to a chance in the distribution of prizes, for a guinea, is, perhaps, the boldest experiment ever attempted in the production of a work of art. Only the principle of combination could render possible such an enterprise; but looking at the success of the prints of "Wellington" and "Nelson," the cost of each of which was nearly equal to that to be incurred in the present case, the Council are confident in the belief that the subscribers will be equal to the occasion, and enable them to carry out successfully what may, without exaggeration, be called a vast undertaking.

"The Road to Ruin" illustrates the incidents and personages of a phase of society with which most people are more or less intimate.

It is a question often mooted whether we are more moral than our fathers and grandfathers were, or whether it is only that more pains are now taken to hide the seamy side of society. At any rate, vice does not stalk abroad with so brazen a front as was its wont when Hogarth painted his powerful pictures; and the critic who, with pen or pencil, seeks to lash the vice of the day, has to choose his scenes with regard to the more fastidious taste of the period, and to be content with less drastic treatment than is adopted in "The Rake's Progress" and other kindred subjects by the same hand. It is true we have scarcely any such gigantic swindles now as the "South Sea Bubble"; and, if the Charles James Fox of to-day sits playing whist till the cards on the floor reach half-way up the chair-legs, the public knows nothing of it. Still, enough comes to the surface to afford ample scope for the pencil of our modern Hogarth; and Mr. Frith may say, with his great prototype, "Let my figures be considered as players dressed for the sublime or genteel comedy,—or farce from high or low life,—I have endeavoured to treat my subjects as a dramatic writer does; my picture is my stage, my men and women my players, who, by means of certain signs and gestures, are to exhibit a dumb show."

Mr. Frith is a *genre* painter of the most realistic kind; there is no necessity to search for a meaning in his paintings. He endeavours to depict, with complete adherence to truth, some phase in the social life of the age. He does not, like Hogarth, revel in the grotesque, nor has he that master's tendency to what may be termed caricature; but he hands down to our successors pictures which must always be of great value, pointing, as they do, a moral, and likewise boldly showing parts of the life of the latter end of the nineteenth century.

Let us now endeavour to enter into the purpose, and the method of evolution, of the artist, as embodied in these scenes, which may fairly claim to rank with any of the well-known works from the same facile hand.

1.—College.

In the first picture, a card-party is drawing to a conclusion, and, by the bank-notes and coin in the pool and on the table, the play has evidently been pretty high; and it will be well to give a glance at the strongly-marked characteristics of the actors in the scene.

The hero, with whom we shall have to travel through the several stages of the story, is a handsome, delicately-featured, if not too strikingly-intellectual youth, evidently, by the furniture and surroundings of his apartment, with plenty of money at his command.

The man at the left-hand corner of the table appears deeply interested in the turn the play seems to be taking. He on the extreme right has evidently made sufficiently frequent applications to the cup which stands on the floor by his side, and, from the absence of any money on the table before him, seems to feel considerable doubt as to the expediency of "taking miss" (the game, no doubt, being three-yard loo) which the host is offering him. The one with his back to us appears to be undecided whether, if he have the opportunity, he shall accept or decline the same offer. The gentleman indulging in a tremendous yawn at the further corner clearly thinks it is time to leave off, and the same feeling seems to influence the one who is blowing out the candle, and him who draws the window-curtain, and discloses the dawn breaking over the buildings of Caius College.

This peep at the *locale* shows us that the scene is laid in lodgings, in Trinity-street or King's Parade, and not within the walls of any college; and the several guests may count on an unpleasant interview with dean or tutor in the morning, seeing that they will have to pass the college gates at an exceedingly exceptional hour.

One of the party, probably not yet inured to keeping it up so late, has fallen asleep on the settee by the window.

The hunting-crops on the wall, the race flagons and cups on the bookcase, the fox's brush and sporting pictures, the foils and boxing-gloves over the mantelpiece, are all indicative of a tendency to a somewhat fast life on the part of the proprietor.

2.—Ascot.

In the second plate, Ascot, we have the beardless host of the college party, developed into a handsome man, with moderate moustache and whiskers, with betting book in hand, standing on the raised platform in the inclosure, intended to bring those within it to a level with the outsiders, but which, since the time indicated in the picture, has been superseded by a re-arrangement of the ground. Close behind our hero is one of the privileged occupants of the inclosure endeavouring to engage him to make a bet with him, rather than yield to the vociferous proposals of the bookmakers and welshers who throng the outside of the railing. We fancy we can discover, in this individual, the features of the man who was doubtful about taking "*miss*" in the college scene,—and the one immediately behind him is decidedly like the youth who faced us, with a cigarette in his mouth, in the same picture.

In the background is a bevy of fair damsels and members of the upper ten thousand, with whom they are ready to bet gloves to any amount, and who are even adepts at hedging, if occasion requires. The surging crowd outside the railing, to the individuals of which, by the way, we may remark the consummate skill of the artist in imparting wonderfully marked variety of character and expression, and the lounging serenity of those within the charmed circle, present a contrast which must have struck every one who has been present at Ascot on the Cup Day.

3.—Arrest.

We may suppose that the result of the betting, which the last scene at the races disclosed, was so far a success as to lure the hero on to further ventures, and to tempt fortune "not wisely, but too well," for here we see him, surrounded by every luxury,—a charming wife and two children,—the handsomely furnished and decorated rooms, two footmen in livery, and all the appliances of comfort. But here, to him, standing in his own drawing-room, and before the eyes of his wife, a bailiff presents that cabalistic strip of parchment which has struck horror to the hearts of so many who have gone on heaping up the ever-increasing pile of incumbrances, and forgetting to reckon the total, or wilfully shutting their eyes to the truth.

He leans against the mantelpiece, unconcernedly, so far as may be, smoking a cigar, determined if possible to keep the knowledge of the true state of the case from his wife, who is starting up from her chair, wondering what sort of vulgar and free people these may be who dare to intrude their plebeian presence into this aristocratic mansion. Let us note the skilful development of the story told in the startled action of the wife, half-rising from her chair,—of the little son placing his hand in his mother's lap,—the unconscious attitude of the small daughter, her whole interest absorbed in her doll,—the matter-of-fact and business-like look of the bailiff,—and the evident nervous feeling of his follower, pinching the brim of his hat, as if, perhaps, feeling somewhat distrustful of the possible intervention of the tall fellows in plush just outside the door. The newspaper on the floor, *Bell's Life*, and the very toys of the children, two jockeys on racehorses, are all characteristic of the tastes of the master of the house.

4.—Struggles.

The results of the writ having fully developed themselves, horses, carriages, plate, furniture, all swept away, the old home must be left, and refuge must be found in some lodging,—probably, by the fittings of the room, in a provincial town of France or Belgium; and, as is universally the case, when poverty overtakes a married couple, another member has been added to the family. In this chamber, on the fourth or fifth story, which serves for parlour and kitchen and all, the hero is racking his brain, in the endeavour to write a comedy. There is rather a cruel touch of satire in selecting this subject, which, he hopes, may bring in something to relieve their pressing wants. The wife, too, has been engaged in water-colour drawing, with the same end in view; but at this moment she is facing the landlady, who enters, with a long formidable-looking account, to which the wife draws her husband's attention, by putting her hand on his shoulder; the boy turns appealingly to his father, and the little daughter, probably an invalid, being wrapped in her mother's only shawl before the fire, looks round wondering what the trouble is.

The landlady does not look like a hard person, but, what would you? What is she to do, with many bills to meet, unless her lodgers pay their account? Of this, alas! there seems small prospect, and we must suppose that all their little belongings have been sold, to stave off immediate want, and that they have somehow managed to get back to England, as the hunted hare—

"Pants to the place from which at first she flew."

5.—The End.

In an attic, in some poor quarter in London, the early dawn, as in the first picture, is looking in at the window, but how different are the surroundings from that gay scene at Cambridge! In place of the decorated and picture-hung walls, the plaster is peeling off in patches, and the ceiling crumbling down. The empty cupboard, the thread bare and even ragged clothes, the broken furniture, and worn-out bed-coverings, all testify to the extremity of want at which the tenants have arrived. In place of silver race-cups and chased tankards, a broken water-jug and battered coffee-pot; and in place of a pool running over with bank-notes and gold,—What? A pistol! And has it come to this? Has this curled darling, cradled in luxury and reared on all that wealth could purchase, come to a suicide's fate at last? Let us, however, catch at that straw, which a drowning man will strive to reach. Our artist has, mercifully, obeyed Horace's maxim, that Medea should not kill her children in public, and left us the option of hoping that something may turn up to prevent the purchase of the pistol from being made to serve its bitter end. However, in whatever way we may suppose the *finale* to develope itself, all must admire the skill and power of expression with which the artist has so depicted the successive stages as to tell the story of the piece; and how, in the technical treatment of each picture, he has made the gradually deepening tone of the work keep pace with the sentimental phase of each scene, up to its culminating point, in the bare and wretched attic, and the livid leaden hue of the early dawn. In the remarkable series of pictures we have been examining, as in an analogous work by the same artist, we must admit that we have "a story recorded by a hand so cunning, and at the same time so faithful, that it will always be referred to, in future, as an authoritative chapter from our contemporaneous history."

In their report for the year 1878, the Council took occasion to remark "how much the influence for good on the advancement of the knowledge of art might be aided by some popular exposition of the teaching afforded by the priceless collection of antiquities in the British Museum." Last year, we were able to state that arrangements had been made for the delivery of a course of lectures by Mr. C. T. Newton, C.B., on Greek sculpture; and now we can point to the fulfilment of that purpose. Mr. Newton began a series of most interesting discourses, in one of the theatres of University College, on the 5th of May last, with an exhaustive examination of the rise of art in the seventh century, B.C., showing that, wherever the influence of Greek civilisation had spread, and wherever a Greek city had sprung up, it was soon provided with temples, statues, and other works of art, dedicated to the gods. Mr. Newton then, in succeeding lectures, traced the progress of Greek art through the epochs marked by the Temple of Artemis at Ephesus,—the age of Phidias, producing the Zeus of Olympia, and the Athene Parthenos at Athens,—the well-known Discobolus of Myron,—Scopas the contemporary of Praxiteles (to which of the two the celebrated group of Niobe and her children was due was never decided), and so down to the last of the great sculptors of Greece, Lysippus. His name was associated with that of Alexander the Great, whose portrait he alone among sculptors was allowed by that king to make.

The Council hail, with satisfaction, the opening of the first exhibition of the Yorkshire Fine Art Society, at Leeds, last June. The lovers of Fine Art at Leeds had lamented, for years, the want of annual exhibitions in the West Riding, for the purpose of encouraging local artists. In 1879, however, the accommodation afforded by the newly-erected Athenæum building gave the requisite opening, and from that time great energy has been shown in completing the arrangements for an exhibition of paintings, &c., which has now been opened. About 1,500 works of art, in oil and water-colours, were shown,

besides a rich array of statuary, engravings, etchings, &c.

In Birmingham, Messrs. Tangye, members of an eminent firm in that city, offered to contribute the munificent sum of 10,000*l.* towards the purchase of examples of art for exhibition in a public Art Gallery, on condition that the town council should make provision for a permanent building, on a scale commensurate with the necessities of the locality. A scheme has been agreed upon by which a portion of the site owned by the municipality, at present uncovered, will be devoted to the erection of art galleries, and a museum worthy of the town and of the object.

It has been questioned by a writer, whose opinion is not to be slighted, how far the establishment of museums has had any beneficial effect on the progress of art in this country. He cites the examples of Greece and Italy, where art grew up without museums, and without old masters to refer to; and maintains that it is the demand for many and large works of art which can alone insure excellence in their production. He adduces the case of the demands for ornamentation of public and private edifices amongst the Greeks and Italians, and the enormous amount of patronage afforded by the Church, in the palmiest days of art. It must be remembered, however, that, in the case of Greece, with its continually recurring games in the circus and the general prevalence of half-nude forms due to the climate, the people lived in the midst of a very school of anatomical culture. The sunny clime of Italy, again, ever produced its picturesque groups of peasants, children, beggars, brigands, always to be found in the porticos of the churches and on the bridges, quays, and stairs of the towns, all serving as models for the painter and the sculptor; not to mention the brightness of the sky, and the purity of the atmosphere.

We have none of these advantages; the demand for decoration of public buildings is next to nothing; the Protestant church demands no "Pietas," or "Stations of the Cross," or the like; wall-paintings do not enter, as they did in Italy, as an essential element into the construction of houses; and therefore it is not unreasonable that we should refer as models for imitation now to the works of the great masters of past times, who built up their art under these conditions. Granting this, however, it has been suggested that there is another point which may well be kept in view, viz., that the greatest care should be exercised as to *what* is put before our young artists for their guidance and imitation. It is to be feared that, in very many cases, a motley collection of all sorts of work, simply because it is old, is thrown down for contemplation and study, without discrimination or order.

Might it not be well to make some arrangement by which (while not rejecting any examples which are interesting from their antiquity alone, though perhaps very inferior in an artistic point of view), the works in each collection should be carefully classified, embracing in one part a chronological arrangement of absolutely good specimens of art of various kinds, having especial regard in this matter to the particular staple manufacture of the place where the exhibition is held? In another part would be collected all such works as are valuable merely as specimens of a bygone style, without putting them forward as models to be imitated. Here we may take occasion to remark that, through the influence of Mr. Mundella, Government has appropriated a sum of 3,000*l.* to procure casts from the best examples of antique sculpture in the British Museum, in order to supply them for the purpose of study to the art-schools all over the country.

In a speech in the House of Commons, on a recent occasion, Mr. Mundella combated the idea that this country was in arrear in the matter of technical education. Let any one look back, he said, to the year 1851. The china and furniture of that time would shock us at the present day. If we compared the art-training at present with the state of things in 1851, it would be found that the progress we had made was marvellous. In our design and colouring of carpets, in our textile manufactures, in our ironwork, our china, and other branches of art-industry, we had made advances which enabled us to compare favourably with almost every other country.

The Council feel that they are justified in thinking that the operations of the Art-Union of London have not been without their effect in contributing towards the result above mentioned, and they are determined to spare no pains in endeavouring not only to maintain the ground thus gained, but to extend the sphere of the Society's usefulness.

The Chairman, at the close of the report, said:—It is my duty to move the adoption of this report. Before doing so, however, I would say that if we had had a choice of day for this meeting we should not have fixed upon this morning, when so many persons, whatever their political opinions may be, are grieving for the loss of one of the most remarkable men of the day. However, the meeting has been fixed for a year, and 10,000 or 11,000 persons having been informed of it, it was out of the question to alter it. I am quite sure you have heard with gratification, if not with some amount of astonishment, that our subscription list keeps up to our average of 10,000*l.* or 11,000*l.* a year. This is a perfectly remarkable fact, considering that our subscribers are to so large an extent a floating body. It is only to be explained by assuming that, when there is depression in one part of the world, there are happiness and content in other parts, so that if we have less from London we have more from Australia, and so our subscription-list maintains its fulness. The report alluded to certain derogatory observations which are constantly made touching the Art-Union of London,—most singular to say, considering its progress, the number of years it has been before the public, and the success which it has attained; but so it is. I am led (if you will give me two or three minutes) in consequence of that observation in the report, to refer to what distressed me very much in looking over the last-published volume of the "Transactions" of the Social Science Association, in which there is a paper containing what I have no hesitation in terming most abominable observations concerning the Art-Union of London. Had they not appeared in so important a publication as the "Transactions" of the Social Science Association, I should have scarcely thought it necessary to allude to them, but, that being the case, it does seem desirable that some few words should be said on the subject. The writer calls the Art-Union "a new and certainly clever way of making money under the pretence of high motives and utter disinterestedness," and talks about its "barring the path of true genius unwilling to cringe to self-styled patrons and to obey their rules and regulations." He winds up by saying that these associations are simply "unions in the vulgar sense of the word, serving as places of retreat for artist-paupers." Now, if there ever was a council that conducted the business of a society that was disinterested as well as able and energetic, it is the Council of the Art-Union of London. There has never been one single whisper as to their disinterestedness, and they have not the slightest power, any one of them, even if so inclined, to make one single sixpence out of the Art-Union of London. All that they do year after year is purely for love of art, and to further the interests of the society. The fact of it is, this writer wholly misunderstands the purpose of the Art-Union of London. It was stated in its first prospectus, as it is stated in its last, that its purpose is "to promote the knowledge and love of the fine arts, and their general advancement in the British Empire, by a wide diffusion of works of native artists; and to elevate art and to encourage its professors, by creating an increased demand for their works and an improved taste on the part of the public;" and the way in which this has been done by the Art-Union of London is perfectly extraordinary. They have sent out by hundreds and thousands the works of our best painters, reproduced by the best engravers that England could furnish. The works of Lee, Landseer, Maclise, E. M. Ward, Frost, Noel Paton, Frith, Stanfield, Turner, and others, have by this agency been made familiar to and brought within the reach of whole populations who would not otherwise have become acquainted with them. Then, again, look at what has been done in the way of art bronzes. When the Art-Union of London first thought of producing a bronze,—from Westmacott, I think it was,—the artist who undertook it was obliged to build his own foundry. We could scarcely get any one to do it. The result of our efforts in this direction alone has been the production of a series of bronzes from Flaxman, Chantrey, Bell, Foley, and other sculptors, which is probably unequalled, and I have no hesitation in saying that the bronze of Caractacus, by Foley, is one of the finest bronzes that have been produced in modern times. Then, again, with regard to the art of medal die-sinking. There were few medal die-sinkers in England when we began our series of medals in honour of British artists. Just as, but for our efforts, line-engraving would have died out in England, so, I believe, would medal die-engraving have died out also but for our commencement of that series of medallions, which have been eagerly sought after. All this work, including the purchase of pictures, has been done with an expenditure of half a million of money, not one guinea of which would have been spent in the cause of art but for the organisation of the Art-Union of London. I do say that gentlemen of position and writers for such a society as the Social Science Association, knowing that their words are to be printed in such a publication as the "Transactions" of that society, are bound to obtain some knowledge of the truth. I can scarcely reprobate too strongly any man who makes use of such expressions as those to which I have alluded. I will only, in conclusion, add one word in reference to this "Road to Ruin," the subject of next year's prints. It is one of the most extraordinary instances of what co-operation can do, that, while three or four guineas, at the very least, would have been the price which an ordinary publisher would have been forced to charge for such a series of prints, the Art-Union of London is able to offer them for a guinea, and to give each purchaser a chance of a prize in the drawing. Under these circumstances, I hope we shall have at least 20,000 subscribers for this painted sermon by Mr. Frith,—the modern Hogarth. I think it is a very remarkable thing that the Art-Union of London is able to give such a series of engravings as these for a guinea, but will say no more about them now. I beg leave to move the adoption of the report.

Mr. Fras. Bennoch, F.S.A., in seconding the motion for the adoption of the report, observed that in a recent visit to the United States and Canada he had had the opportunity of realising to some extent the universality and far-reachingness of the beneficial operations of the Art-Union of London. Wherever he went,—in Boston or New York, Philadelphia or Richmond, Montreal or Toronto,—there he found suspended on the walls of the rooms in houses which he visited some of the prints issued by the Art-Union of London. When it was remembered that the Art-Union of London had been in operation for forty-five years, and that during that period they had had on an average 12,000 subscribers every year, it would be seen that they had been the means of distributing some 540,000 engravings of works by the best artists, and if it were assumed that each engraving, since its issue, had been gazed upon by 100 persons,—a very moderate estimate,—it followed that the engravings produced and issued by the Union had been seen by 54,000,000 people, to the majority of whom they had no doubt given great pleasure. These results, prodigious as they were, were due to co-operation. He trusted that in the coming year they would have not only 20,000, but 25,000 or 30,000 subscribers; for every one who knew anything of the story of the time in which he lived, and desired to hand down that story in a pictorial manner to his descendants, could not do better than become a subscriber to the Art-Union of London during the coming year.

The report was unanimously adopted.

Mr. Hallett moved,—

"That the best thanks of the meeting be given to Mr. Lewis Pocock and Mr. Edmund E. Antrobus, for their continued efforts to advance the Art-Union."

As a member of the Council he could bear testimony to the untiring efforts made by those gentlemen, the honorary secretaries, to advance the interests of the society.

Sir Walter Stirling said it gave him very great pleasure to second the proposition, considering that the honorary secretaries were the principal pivots upon which the machinery of the society turned.

The motion was carried amidst applause, and Mr. Antrobus briefly acknowledged the compliment.

Mr. James Hopwood moved, and Mr. R. Z. S. Troughton seconded, a vote of thanks to Miss Stewart and Miss Barry, for assistance in the drawing for the prizes, and to the auditors and scrutineers.

Mr. Pocock moved,—

"That this meeting offers its best thanks to Messrs. A. & S. Gatti for granting the use of their theatre on this occasion, and to Mr. Jecks and Mr. Charkey for the excellent arrangements they have made."

This was seconded by Mr. Antrobus, and carried unanimously, the Chairman observing that the use of the theatre was most readily and willingly given by Messrs. Gatti.

On the motion of Mr. Aston Webb, seconded by Mr. Antrobus, a vote of thanks was given to the Chairman, and the drawing for the prizes was proceeded with. We append a list of the principal prize-winners:—

Entitled to the original Drawing,—"*The Loss of the Revenge.*"—W. G. Chovill, Chetwynde-road.

200*l.*—C. B. Hall, Quebec.

150*l.*—H. W. Callan, Sydney; W. Johnson, Southampton.

100*l.*—Mrs. Bostock, Alsager.

75*l.*—Miss E. Carter, Wallington; W. Francke, 135, New North-road; E. Maule, Stockton.

60*l.*—J. A. Jameson, Hull; G. Meek, Driffield; "Trust," 3, Spanish-road, S.W.

45*l.*—Dr. Andrew, Launceston; Messrs. Copeland; Stoke; R. B. Evered, Drury-lane; — Faulkner, Minitora; G. McCool, Londonderry; C. Wincer, Walsall.

40*l.*—T. Connolly, 333, Strand; J. Eager, Sydney; W. F. Mitchell, Falkirk; J. Renardson, Trafalgar-road; C. Runnette, Pittsburg; C. Whitehead, Crouch-end.

35*l.*—G. Askew, New Barnet; C. Bowles, South Hackney; J. H. Bradford, Acton; H. W. Carter, Down-street; J. W. Fitt, Port Augustus; W. Knowles, Kentish Town-road; M. A. C., Stoke Newington; Alex Pedro, Barcelona; R. Thomas, Carnarvon; L. R. Wood, Carnarvon.

30*l.*—A. E. Allen, Forest-hill; Major Anderson, Ludlow; F. C. Ball, Middlesbrough; E. Bartlett, Plymouth; J. H. Bly, Yarmouth; A. Bradley, Wrexham; J. Bulmer, Rotherhithe; T. W. Jackson, Melbourne; W. H. Maxwell, Princes-street, E.C.; H. Pooley, Egremont; W. N. Rudge, Stock Exchange; Rev. H. Sutcliffe, Keele Vicarage.

25*l.*—A. Arrowsmith, High-street, Borough, S.E.; T. Brissett, Inglewood; J. Brown, Railway Clearing-house; W. A. Cubitt, Shepherd's-bush; T. Eanion, Newmarket; F. R. Griggs, Loughborough; E. J. Horner,

Cheshunt: J. G. Johnson, Canterbury; E. Joyce, Ryde; G. Mackie, 31, Lombard-street; L. J. Oatway, Bush-lane; J. Shetland & Son, Table Cape.

20l.—Mrs. G. Clark, Herne-hill; M. C. Cooper, Springhill; D. M. Dewey, Rochester, U.S.A.; E. Gumpf, Frankfort; T. D. S. Heron, Geelong; G. Jamieson, Pembroke Dock; M. F. Kelly, Sydney; G. W. Needham, Oldham; C. H. Reeson, Cincinnati; H. Stratford, Bradford.

15l.—B. Abney, Crossland, Huddersfield; A. Applegate, Manchester; Capt. Boultbee, Bedford; D. Bruvett, Cambridge; W. Burchall, Egremont; W. J. Curtis, Kadina, S.A.; G. A. Deane, Batley; H. S. Garvey, Grimsby; T. W. Jaques, Clifton; H. Le Brun, Peterborough, Canada; A. H. Lock, Dorchester; C. Mantell, Coblentz; J. Rylands, Thelwall, Warrington; Stuckenschmidt, Marestreet, E.; G. Tilling, Great Dover-street; A. S. Tomkins, Caterham; J. Tucker, Ashburton, New Zealand; J. H. Welch, Amhurst-road, E.; C. Wilkes, Newmarket; R. G. Wylde, South Kensington Museum.

10l.—E. Addison, Ballhanna, S.A.; C. Alcock, Bromley-common, S.E.; J. Box, Gt. Smith-street, S. W.; R. Brown, Commercial-road, E.; T. C. Button, Windsor; J. W. Carroll, Sale, Victoria; W. Coulson, Rosario; R. T. Clinch, St. John, N.B.; A. Habbishaw, Newcastle, Staffordshire; J. Kelly, Durham-villa, Wandsworth C.; E. H. Mack, Melbourne; C. L. P. Pemberton, Banbury; Mrs. Portal, Idol-lane, E.C.; C. J. Rowland, Carnarvon; A. G. Russell, Hackney, E.; E. Shenton, Geraldton, W. A.; H. J. Scott, Stock Exchange; R. G. Symes, Dalston; R. Wallace, Adelaide; D. T. Wilson, Tasmania.

A China Tazza.—G. Ashenheim, 27, Mincing-lane, E.C.; T. H. Budd, Glo'ster-terrace, W.; R. H. Daubney, Market Rasen; A. Deck, Cambridge; R. Ellett, Cirencester; W. Greenhill, Surbiton, S.W.; W. Grey, Cork, T. C. Hunt, Richmond, S.W.; W. G. Lincoln, Hartford, U.S.A.; J. Mallinson, Bradford; C. Phillips, Whetstone, N.; F. Purcell, Greenheys, Manchester; T. D. Simcock, Manchester; M. Smith, Stone, Staff.; A. Spurling, Blackheath, S.E.; A. Stockdale, Leeds; J. J. Stocking, Lynn; H. L. Wilkie, Adelaide; R. L. Williams, 43, Lombard-street, E.C.; T. B. Wyer, 80, Wood-street, E.C.

Nine Scenes from English History.—T., Alexander, Hungerford; C., Barnard, Epsom; G., Barrett, Bramley; R. T. Benham, Springfield-road, N.W.; Mrs. Benham, Colchester; R. Bolton, Claremont-square, N.; W. H. C. Boswell, 112, Bishopsgate-street; R. Brown, 45, Clapton Park-road; W. Brown, Leicester; A. C. Canham, Bayswater; R. F. Clark, Barnes; — Cochrane, Chelmsford; W. H. Collin, South Hackney; Crosby, Nice; E. O. Day, Waterloo-road, S.E.; C. Doe, Torrington; J. Ellis, New Plymouth, N.Z.; Capt. Evans, Ballarat; H. S. Farey, Ilford-road, E.; R. H. Ferguson, Port Adelaide; W. J. Foster, Birchin-lane, E.C.; W. R. Freethy, Tollington Park; C. F. Froy, Kew, S.W.; Mrs. J. House, Peterborough; Jos. Huartson, Barrow-in-Furness; W. Hurst, Harrow-road; Mrs. Hyde, Hartford, U.S.A.; E. L. Inderwick, Cuthbert House, Westgate-on-Sea; H. H. Kramers, Rotterdam; Capt. Marshall, A. and N. Club; E. G. Mason, New Brighton; L. J. M. Mason, Russell-square, W.C.; L. Mayer, Coleman-street, E.C.; C. Nash, Inverness-terrace, W.; P. J. Newland, Sydney, N.S.W.; C. A. Partridge, Ludlow; G. E. Pearson, Stockport; J. F. Shaw, Caversham-road, N.W.; F. G. Shedel, Stoke Newington; W. W. Spicer, Chard; G. E. Stewart, Richmond-hill; — Taylor, Manningtree; R. Thomas, Birmingham; Dr. S. Thorpe, Westport, N.Z.; D. Troy, Ballarat; W. R. Wadsworth, Port Hope, Ontario; P. Wells, Elgin-crescent, W.; J. H. Wetenhall, Warnford-court, E.C.; C. H. Williams, Whitechapel; H. C. Wise, Warwick.

A Framed Proof of the Countess of Beaford.—Edmund E. Antrobus, F.S.A., 14, Kensington Palace-gardens; J. W. Arrowsmith, Quay-street, Bristol; Rev. J. C. Bagshaw, Osbornby, Folkingham, Lincolnshire; L. Balch, Post-office, Caterham; J. Beardmore, Parkhead Forge, Glasgow; H. Buist, Sydney, N.S.W.; T. F. Butt, Bocking, near Braintree; Alfred Catt, Gladstone, S.A.; James Cheetham, Farnagulla, Victoria; Luke Cherry, Goldington-road, Bedford; H. Davidson, Aberamffra, Hornsey-lane, N.; W. Finlay, Melbourne, Victoria; A. Fisben, Ballarat; G. Foden, Poplar-villas, Huddersfield; — Gatley, St. Columb; E. Gregg, 11, Longridge-road, Earl's-court; G. Grocock, Magnus-street, Newark; Charles Halford, per P. F. Proctor, Brodrick-road, Upper Tooting; F. J. Hibbert, 86, Fargate, Sheffield; Wm. Hooper, Benhill-wood-road, Sutton, Surrey; Richard Howell, Dunkeld, Victoria; G. Hudson, 45, Strand, W.C; J. Hulme, Leigh-avenue, Maple; J. Inglis, Christchurch, New Zealand; Jno. Jackson, 32, Leadenhall-street, E.C.; H.W. Lea, Lutterworth; Sir G. Leeds, bart., Osborne-vil'a, Hammersmith; R. J. Manning, High-street, Wells, Somerset; Dr. Ovenden, Kaiaipoi, New Zealand; — Ralston, 144, Sauchiehall-street, Glasgow; A. Reed, Town-hall, Woolwich; T. Richardson, Kooringa, S.A.; J. Sharp, Boxley-road, Maidstone; J. Skinner, 20, Birchin-lane, E.C.; J. Sugar, Bounds-green, Southgate, N.; R. Tatham, Newby-place, Poplar, E.; H. V. Telfer, Hungerford; Rowland Thomas, Maesyrha', Neath; A. Thorne, 12, Mark-lane, E.C.; H. H. Tillbrook, Clare, S.A.; R. Tilley, Gladstone, S.A.; Col. H. Torrens Walker, Seafield, Weston-super-Mare; D. Ward, Terrington, Lynn; A. Webb, 19, Queen Anne's-gate, S.W.; B. Webb, Hobart Town, Tasmania; Mrs. M. W. Whittaker, Ellersy, Putney; T. S. Wilkinson, Church House, Madeley, Staffordshire; R. J. Winter, 24, Goodge-street, Tottenham Court-road; George E. Wood, Coal Exchange, E.C.; H. R. Wyndham, Cockermouth.

A Parian Statuette, "The Little Boat-builder."—Charles Aird, The Glen, Eastbourne; A. F. Aldridge, 7, Fenchurch-street, E.C.; W. G. Brighten, Argyll Hotel, Southend; John C. Bull, Warwick; Thomas Bullivant, Oundle; Miss M. D. Byrne, Oakendean-park, Cowfold, Sussex; Mrs. Chapman, Spring-bank, N.Z.; C. Clements, 21, Gillies-street, Kentish-town; F. W. Coupese, 145, Tottenham-court-road, W.; James Cunningham, 115, Liverpool-street, Sydney; H. P. Dickenson, Grantham; John Eaton, Strathdene, Ashton-under-Lyne; J. T. Fickling, Adelaide; Captain Forsyth, R.N., Ryde, Isle of Wight; J. Gloster, Windmill-street, Walsall; Jno. Gould, Bowden, S.A.; C. F. Greenland, Fernhurst, Sydenham; C. S. Hill, Adelaide; Robt. Johnson, Walthamstow; W. G. Lees, 180, Radford-road, New Basford; J. S. Lloyd, Adelaide; Samuel Manning, Christchurch, N.Z.; R. S. Newington, Tattlebury, Goudhurst; T. F. Oliver, 51, Crowndale-road, Camden-town; John Parker, Catherine-street, Strand; J. E. Shepherd, 95, Halton-road, Canonbury; Alexander Sim, 29, Clements-lane, E.C.; A. A. Taylor, Watling-street, E.C.; T. S. Warman, Adelaide; Hy. West, Pulham Market.

THE TRIMOLET COLLECTION.

WHAT LYONS LOST BY WHITEWASH.

HENCEFORTH the Museum of Dijon will be considered the most remarkable of all provincial collections. It has just, by a fortunate hazard, acquired the entire collection of curiosities and objects of art left by M. Trimolet. This gentleman belonged to one of the wealthy commercial families of Lyons, but had spent his youth in the study of art in France and Italy. In spite, however, of his great power of appreciation, he was not able to create anything very remarkable, and consequently determined to devote his life to the collection of master-pieces which others more fortunate than himself had been able to produce. His life, therefore, became a constant hunt, prolonged all over Italy and France for objects of art. The collection thus acquired became equal to the private collections of M. de Rothschild or M. Double, and could compete even with that of the Musée de Cluny. Born at Lyons, it was naturally thought that M. Trimolet would leave his collection to his native town, but it appears that a long time ago the municipality decided that the house where these art treasures were kept in the Rue Saint Joseph should be whitewashed. This house was very old, and had certain architectural merits. As a true artist, M. Trimolet preferred the antique grey tint of the old stone to the common-place neatness of modern whitewash. He, therefore, politely requested that his house might be spared, and finally refused to carry out the order given by the local authorities. The municipality would not, however, listen to the artist's entreaties; they could not understand his arguments or motives, and finally sent their own workmen to whitewash by force the old walls of M. Trimolet's house. Infuriated at this affront and the lack of artistic appreciation displayed by the authorities, M. Trimolet concluded that the town was unworthy to inherit his long-amassed treasures. Thus it happens that the collection was left to the Museum of Dijon, and not to the town of Lyons.

Last June the manager of the Dijon Museum went to Lyons to receive this legacy, estimated at a value of several millions of francs. Though two notaries were constantly at work, it took no less than forty days to draw up an inventory of all the objects left. There were ancient and modern paintings, enamels, rare china, stained glass, jewelry, glass, and a great variety of art-furniture. At Dijon five huge rooms were entirely filled with these objects, and after several months spent over this installation, are now at last thrown open to the public. The Trimolet Museum has been organised with much system and much taste, and travellers on their road to Marseilles, Switzerland, or Italy, will now have yet another inducement tempting them to linger in the ancient capital of Burgundy.

PROPOSED CITY IMPROVEMENT.

THE portion of King's Arms-yard on the eastern side of Moorgate-street is about to be continued as a carriageway into Tokenhouse-yard. The northern flank of the Auction Mart will form the south-eastern corner of an extended street, the full width of the existing opening into Moorgate-street, so that both King's Arms-yard and Tokenhouse-yard will each cease to be a *cul-de-sac* for carriage traffic.

Church-court-passage, between the Church of St. Mary, Lothbury, and Mr. Somers Clarke's Venetian Building (the General Credit Company's offices), will also be continued as a private passage into King's Arms-yard, thus affording an additional communication for foot-passengers with Lothbury.

The exposed flank of the Auction Mart will be treated in unison with the front elevation in Tokenhouse-yard, and a narrow strip of land is reserved at the opposite corner, so that the architectural façades of the new street will be continuous on both sides. The block of buildings on the south side, and adjoining the Auction Mart, will have an adequately ornate back-front overlooking the "garden-treated" churchyard of the quaint church of St. Mary (now in process of restoration), celebrated in connexion with the "Golden Lectureship."

The new building will cover an area of over 14,000 ft. (in addition to the land sacrificed in the formation of the new street), and will provide office accommodation of more than 50,000 ft. of actual "carpet area."

The land is leased from the Mercers' Company, to whom it was devised in trust by Sir Richard Whittington, of the Highgate Stone legend; and the demolitions in progress include some fine old City mansions, one dating so far back as the middle of the seventeenth century, and lately occupied by Messrs. Dent, Palmer, & Co.; another, of the early Georgian period, by Messrs. Goldsmid & Mocatta; and still another, of a later period, by Messrs. Alexander Fletcher & Co.; each affording interesting evidences of City life in the good old days, when our merchant princes lived and "made good cheer" over the "counting-house."

For the convenience of the present tenants, who will occupy offices in the new structures, the buildings on the north side will not be removed until the new ones on the south side are completed.

The architect is Mr. Bassett Keeling, and the works will be carried out by Messrs. Dove, Brothers.

SANITARY PROGRESS IN DUBLIN.

IN June, 1880, the Royal Commissioners appointed by her Majesty to inquire into the sanitary state of Dublin made their report, since which time the Corporation has commenced in earnest to carry out the recommendations embodied in that request, namely, to improve street paving and scavenging; to inspect and improve tenement houses; to provide improved dwellings; to build baths and washhouses; as also to provide public abattoirs and close objectionable private slaughterhouses,—leaving the purification of the River Liffey for the present. A movement is on foot for the improvement of the drainage of dwelling-houses by means of a Sanitary Protection Society similar to those which have been established in London and elsewhere. The necessity for some such provision is shown by the following statement made by Mr. Rawlinson, C.B., chairman of the late Sanitary Commission:—

"I wish at this point to state, for the information of the inhabitants of the better class of houses in Dublin, that I have no hesitation in saying there is not a single residence in Dublin or in its vicinity, or a single nobleman's residence in Ireland, I do not care where it is situated, which, if its drains and sewers have not been scientifically dealt with within the last half dozen years, is in a satisfactory condition,—that is, if there are any sewers or drains at all, they are in a bad, dangerous, and unwholesome condition. I know these facts, and this induces me to draw the attention of parties residing under such conditions to the danger they are running into; as, if they value their money more than they value their comfort and their health, they may be living under conditions where their life is not worth twelve months' purchase, if anything occurred to develope the elements of evil to which they are quietly submitting, by leaving their residences in such a state. Now, as to Dublin,—you may sewer it to perfection, you may purify the Liffey, you may scavenge and do everything you possibly can; but if the persons who possess wealth and who are living in these large houses which have old drains, do not take thought and get their premises properly examined, and face the expenditure, they will continue to live under conditions that must tend to great discomfort, and probably to shorten the lives either of themselves or some members of their families."

We reviewed the report at the time it appeared.

THE NEW GROYNES AT HOVE.

DEPARTING from the old system of carrying out a straight groyne at a right angle from the shore, Mr. Ellice-Clark, the Engineer to the Hove Commissioners, has given effect to a theory of his own. Originally, he had recommended the construction of three groynes; but, after seeing the effect of the gales (subsequently to his report) he came to the conclusion that four would be necessary. The Commissioners ordered two to be erected by way of instalment. These "experimental" groynes, as they may be termed, are opposite Waterloo-street and Lansdowne-place; and instead of being *straight*, will be somewhat *curved*, more like the arm of an easy chair or the cantilever of a balcony. Further, they will be erected at an angle of 80 degrees in an easterly direction from the shore line, the object of this being to reduce the "scour" on the lee (or east) side, by giving the wave a large front to break upon, and thus throwing the stream, or wash, of the backwater farther to the east than when the groyne is at right angles. Neither will the "travelling" beach so easily escape.

The two groynes in question will each be about 280 ft. in length, with a width, at the base, of 15 ft. 9 in., and an average width at the top of 5 ft. 3 in. They will be built of concrete blocks, of which 30,000, weighing from 2 cwt. to 3 cwt. each, will have to be made. Here, again, there is a departure from the old

principle. Instead of the blocks being made square, they are cast in moulds forming the segment of an arch, to give, when placed in position, a greater resisting power; and they will be the more firmly held in their place by "dowels," the latter being formed of cement poured into hollows left in the sides of the blocks for that purpose. All the external blocks are faced with land flints, "pointed" in cement by hand and trowel, like those of the Brighton concrete groynes; giving them a greater finish as well as greater durability. They are composed of five parts of shingle, one part of cement, and two parts of sand. The latter, however, varies slightly, as it depends upon the coarseness of the shingle, for the part which it has to play is that of filling in the interstices between the shingle, consequently, the finer or coarser the latter, the lesser or greater the quantity of sand required. The "hearting," or the filling-in, blocks,—those which are deposited between the two faces of the groyne,—are composed of twelve parts of shingle and one of cement; and in incorporating the cement with the shingle sea-water only is used, and, contrary to ancient practice, very little of that,—the quantity used being only just sufficient to set the cement free. The theory is, that, as the whole of the water must evaporate in time, the greater the bulk of water used the less solid must the masonry be when the process of evaporation has ceased; and so small, in fact, is the quantity of water used that the concrete before it is poured into the moulds has not sufficient moisture to hold the component parts together; but they adhere and harden as they dry.

The groynes,—which are being built by Messrs. Cheesman & Co., of Brighton, at a cost of 2,200*l.* each,—will, except something unforeseen occurs, be completed by the end of next autumn. Difficulties presented themselves at first, and are being met with at the present moment. At the outset, the contractors were delayed by being unable to obtain a cement equal to that included in the specification; but it is now being supplied regularly by Messrs. Bazley White, Brothers, from their works on the Medway.

PROPOSED ROMAN CATHOLIC COLLEGE, CANTERBURY.

A NEW College (St. Mary's) is about to be erected at Hale's-place, Canterbury, by the French Jesuits, who have recently purchased that estate, in the parish of St. Stephen's. The buildings will consist of two blocks, one on the east, the other on the west of the mansion. Each block will cover an area of about 3,000 square yards, and will consist of a community wing, with numerous sitting and study rooms: dining-hall, 63 ft. by 25 ft.; two refectories, each 40 ft. by 26 ft.; two studies, 42 ft. by 29 ft.; chemical laboratory, 40 ft. by 26 ft.; twelve class-rooms, each about 26 ft. by 20 ft.; and ten music class-rooms. The exhibition-hall adjoins the college, and will have iron roof principals, covered with 1¼-in. pitch-pine boards, varnished; the floor will be laid with wood pavement, Burnett's process. A stage will be erected at the east end, and a gallery at the west. The Rev. R. Vaughan, S.J., Liverpool, we are told, has prepared the plans, and under his supervision the work will be carried out. Mr. John L. Ward, builder, of Upper Brook-street, Manchester, is the contractor.

A NEW SUBURBAN BUILDING ESTATE AT PONDER'S END.

LARGE SALE.

LAST week an extensive estate between Ponder's-end and Enfield, upwards of sixty acres in extent, which is about to be laid out for building purposes, was offered for sale at the Auction Mart, by Mr. Arthur Jackson. The sale took place by direction of the executors under the will of the late Mr. Mitchell, and brought together a very large company of persons interested in building. Upwards of forty acres of the estate are at present occupied as market-garden land, whilst on another portion of the estate it was said there were brickfields and deep beds of unworked clay, together with several valuable residences standing in their own grounds. Before submitting the property, the auctioneer pointed out its great value for its intended purpose, observing that there was a rapidly-increasing demand for building land in the neighbourhood of the estate, through which a tramway line was proposed to be laid down. The sale then commenced, occupying between two and three hours. One of the largest lots offered and sold was 32 acres of market-garden land, nearly 15 acres of which are planted with fruit-trees. It realised 9,100*l.* Another plot of market-garden ground, occupying six acres, was sold for 2,000*l.* Five acres of brickfield, of which one acre and a half is unworked, were sold for 950*l.* One of the most prominent features of the sale was sixty-seven lots of freehold building land, having frontages to two principal roads in the locality. The frontages averaged 15 ft., with a depth varying from 64 ft. to 84 ft., and realised from 15*l.* to 20*l.* each.

The property comprising the remaining portion of the sale consisted of various classes of houses and grounds. A mansion called Broadlands House, which stands in an acre of land, realised 1,350*l.*; a fruit garden, near St. James's Church, fetched 1,050*l.*; twelve houses in St. James's-road, realised from 310*l.* to 320*l.* each; and a similar number of smaller houses adjoining were sold at 180*l.* and 200*l.* each. Three freehold houses in High-street, Ponder's-end, fetched 1,200*l.*; two leasehold houses in the same street were purchased for 235*l.*; a semi-detached leasehold house, in St. James's-road, with a cottage adjoining, was sold for 350*l.*; whilst a brickfield in the Nag's Head-lane realised 1,285*l.* The total sum realised by the sale was 22,000*l.*

EXTENSION OF THE GRAND HOTEL.

NOTWITHSTANDING the large extent of accommodation for visitors to the recently-opened Grand Hotel, it has already been found that an enlargement of the building is necessary, and such enlargement is now in progress. The addition consists of an extension of the elevation in Northumberland-avenue, 35 ft. in length, in the direction of the Thames Embankment, and carried the entire depth to Northumberland-street, covering an additional area of 5,000 superficial feet. In the enlargement of the building the original design is being adhered to, but in consequence of the descent of the roadway of the Avenue to the Embankment, there will be eight floors as against seven floors in the building already open for business, the entire height of the extension at present in progress being 110 ft. from the ground level. Each floor of the extension will have a range of four windows. The extension admits of the enclosure of a spacious open area in the centre of the building, from which light will be obtained to the rooms on the several floors between the Avenue frontage and Northumberland-street. The ground-floor of the extension will contain two large additional dining-rooms, whilst the several upper floors will provide between sixty and seventy additional bed and sitting rooms. The building is being erected in a very substantial manner.

The works are being carried out from the designs of Messrs. Francis, architects, by Mr. G. H. Holloway, who was clerk of the works during the erection of the main building, and who has been appointed by the directors to superintend the extension.

THE NEWTON ABBOT EXHIBITION OF WORKS OF ART.

THIS exhibition, which was opened in the Alexandra Hall on the 20th inst. by the Earl of Devon, comprises pictures, art pottery,—English and foreign,—carvings in wood and stone, mosaics, tapestry, and lace. Mr. Price, of Paignton, has lent two paintings by Turner, representing "Going to the Ball" and "Returning from the Ball," on the lagoon of Venice. The same gentleman has also forwarded "The Black Brunswicker," by Millais. Sir Stafford Northcote contributes the famous picture of his ancestor, Northcote, R.A., by himself. A fine Sir Joshua, representing a choir of angels singing, attracts attention in the immediate vicinity, and there is also a portrait by Sir Joshua Reynolds of Dr. Gortley. Mr. Champernowne, of Dartington Hall, contributes a gallery picture of "Spring," by Artois, with the figures by Teniers; as also a Canaletti, the "Castle of San Angelo, at Rome," and two exquisite Vandervelts. At the end of the room are two portraits of Devonshire Worthies; one, the late Mr. Champernowne, by Phillips, R.A., and the other of the late Mr. Arthur Acland Troyte, contributed by his son, Mr. Charles A. W. Troyte, of Huntsham Court, who also sends a chalk drawing of his grandfather, the late Sir Thomas Dyke Acland, and a pencil drawing of his eldest daughter,—all three pictures by G. Richmond, R.A. The committee are indebted to the South Kensington Art Department for "The Triumph of Saul," by Rubens, a landscape by Wynants, and some other pictures.

In terra-cotta and pottery the exhibition makes a good show. South Kensington sends three glass cases, one containing a grand collection of majolica, another of Persian and Rhodian ware, while the third is occupied by modern French china, for the most part decorated by pupils of schools of art. Mr. Harvey, of Torquay, has fitted up a glass case, consisting of an assemblage of crystals and enamels, the value of which is estimated by competent judges to be very little short of 10,000*l.* Mr. Harvey has also forwarded a numerous collection of specimens of Limoges enamels, of Swansea and Viennese china, Sèvres, Italian plaques, and *capo di monte*. The revived manufacture of Crown porcelain at Derby, under the direction of Mr. Edward Phillips, is represented by an array of figures, vases, pilgrim-bottles, Hispano-Moorish china, and pierced ivory china. The Crown Derby have also forwarded a piece, in biscuit china, the subject of which is Rinaldo and Armida, as described in Tasso's "Jerusalem Delivered."

Mr. H. Studdy, J.P., of Waddeton Court, Stoke Gabriel, South Devon, sends an interesting collection of black oak carved figures, and a piece of wainscoting, from his residence.

The contribution of Mr. F. Drake, of the Stained-Glass Works, Cathedral-yard, Exeter, consists of a series of cartoons, filling a large wall space. These cartoons are to be executed in tiles, and are to adorn the reredos of the chapel of the House of Mercy at Lostwithiel. The central panel contains a representation of the crucified Saviour, and the adjoining panels have representations of St. John and the Virgin. These, again, are flanked by very large panels, filling the entire wall spaces between the altar and the north and south walls of the chancel, and they represent the angelic hosts in their due order.

Mr. Harry Hems, of Exeter, contributes four specimens of his workmanship. Two of these are in pure statuary marble, and two are wrought in English oak. The former are portrait medallions of the Archbishop of Canterbury and of Cardinal Manning respectively. One of the works in oak is a large panel, upon which is carved the full-length figure of St. Veronica, in *mezzo-relievo*. The other carved panel is one that will ultimately form the central cant of an Oxfordshire pulpit. Thereon are boldly carved the symbols of the four Evangelists. Besides these samples of his work, Mr. Hems contributes from his collection a number of interesting old tiles.

PATENT RECORD.*

APPLICATIONS FOR LETTERS PATENT.

1,432. W. Morgans, Bristol. Deodorising water-closets, &c. April 1, 1881.

1,434. H. Barron, West End-lane. Disinfectant apparatus for water-closets. April 1, 1881.

1,439. W. H. Westwood and E. T. Wright, Dudley. Valves for liquids, &c. April 1, 1881.

1,440. B. Giles, Blackheath. Preventing the explosion of kitchen boilers. April 1, 1881.

1,449. A. MacPhail, Cannon-street. Fire-grates, &c. April 2, 1881.

1,450 R. McDonald, Wishaw. Safety apparatus for kitchen boilers. April 2, 1881.

1,457. R. H. Reeves, Parkhurst. Ventilating apparatus. April 2, 1881.

1,459. W. Baird, Dublin. High-pressure ball-cocks, &c. April 2, 1881.

1,473. G. B. Jerram, Walthamstow. Pipes and syphon-traps for drains, &c. April 5, 1881.

1,475. W. H. Dandy, Great Driffield. Dwarf window blinds and screens. April 5, 1881.

1,483. J. Ingleby, Manchester. Cocks, valves, valve-boxes, &c. (Com. by R. Meyer, Breslau.) April 5, 1881.

1,485. G. Tall and J. Daddy, Kingston-upon-Hull. Compound for preventing the escape of steam, gas, water, &c., from joints. April 5, 1881.

* Compiled by Hart & Co., patent agents, 28, New Bridge-street, E.C.

1,520. R. Applegarth, Queen Victoria-street. Decorating bricks, tiles, glass, marble, &c. (Com. by E. A. Lheureux, Paris.) April 7, 1881.

1,528. W. T. Sugg, Westminster. Uniting gas or water pipes. April 7, 1881.

1,530. J. C. J. Smith, Northfleet. Manufacture of cement. April 7, 1881.

1,545. J. C. Newborn, Fleet-street. Moistening, cooling, and purifying air. (Com. by A. J. Desmarest, P. Cosnard, E. Sée, and P. Sée, Lille, France.) April 8, 1881.

1,555. J. G. Tongue, Southampton-buildings. Preparing bituminous substances for building, paving, &c. (Com. by H. Randhahn, Waldaw, Prussia.) April 9, 1881.

1,561. W. Lawley & J. Lawley, West Bromwich. Metallic road gutters. April 9, 1881.

1,564. R. Wild, Littleborough, and H. Ledger, Leek. Treating and purifying sewage, &c. April 11, 1881.

1,566. H. J. Allison, Southampton-buildings. Clip for securing slates, &c., on roofs. (Com. by J. B. Celier, Nevers, France.) April 11, 1881.

1,570. R. Pease and T. Lupton, Bradford. Sanitary appliances. April 11, 1881.

1,590. T. Lloyd, Winchester. Pipe joints. April 12, 1881.

1,616. F. A. Lawrance, Stevenage. Sash-bars. April 13, 1881.

1,623. J. D'Arcy, Belvedere. Fusible compounds for cements, &c. April 13, 1881.

1,628. G. E. Mineard, Kensington, and T. Crapper, Chelsea. Ventilating house-drains. April 13, 1881.

1,646. H. P. Hold, Leeds. Sanitary appliances for buildings, &c. April 14, 1881.

NOTICES TO PROCEED

have been given by the following applicants on the dates named.

April 5, 1881.

4,990. J. Bruce, Nottingham. Apparatus for opening, closing, &c., casements, sashes, ventilators, &c. Nov. 30, 1880.

5,038. J. L. Corbett, Glasgow. Taps or valves for water. Dec. 3, 1880.

5,215. W. Edes, Dover. Construction of sewers and drains. Dec. 13, 1880.

954. J. Taylor, Clapham-road. Paving-blocks for roadways, &c. March 5, 1881.

April 8, 1881.

5,055. J. Delord, Nîmes, France. Syphons. Dec. 4, 1880.

5,472. C. F. Elliott, Liverpool. Glazing, &c. Dec. 29, 1880.

ABRIDGMENTS OF SPECIFICATIONS

Published during the Week ending April 9, 1881.

3,476. R. C. Perry, Manchester. Spike screw or lock nail.

A spike-screw, having flat or smooth sides so that it may be quickly driven in, has segments of a spiral or not spiral thread, cut on it, so that when turned partly round, it is secured. August 27, 1880. Price 2d.

3,485. W. R. Lake, Southampton Buildings. Fountain apparatus.

The pressure of the water is utilised for raising again water which has passed through the fountain, by means of an injector, with which the water from the main pipe is caused to draw a supply of water from the basin, and force it through the jets. (Com. by W. Bockman, Berlin.) (*Pro. Pro.*) August 27, 1880. Price 4d.

3,497. E. Willard & W. Morley, Bermondsey. Folding gas or tide flaps.

To prevent the passage of gases from main sewers into lateral sewers. The flap is made in parallel sections, jointed together, so that the lowest section can turn on the adjoining one, that again on the next upper one, and so on. The uppermost section is jointed on the valve seat. August 28, 1880. Price 4d.

3,518. W. A. Barlow, St. Paul's Church-yard. Coloured glass and metallic windows.

The ornament required is cut out of sheet metal, which is polished, japanned, or coated and plated as required. The glass, properly prepared, is then placed on one or both sides of these ornamental pieces of metal, and is soldered with strips of lead, or otherwise attached to the same. (Com. by F. Daudois, Paris.) (*Pro. Pro.*) August 30, 1880. Price 2d.

3,536. B. R. Phillipson, Dublin. Valves.

To supply air to water-pipes, &c., during frost to prevent bursting. A draw-off cock is placed at the lowest part of the pipe to allow the water therein to escape, and a valve is placed at or near the upper end to allow the air to enter. The valve is a plunger, made of glass, china, or other non-corrosive substance, and plays in a cylinder fitted with screwed ends, one of which is perforated for the admission of air. When the pipe is full of water, the plunger closes the perforated end. (*Pro. Pro.*). September 1, 1880. Price 2d.

3,561. J. Coulong, Blackburn, and J. Robertshaw, Manchester. Steam traps.

For liberating air and water from steam-pipes, &c. A hollow sphere, fitted with a boss or cylindrical part, is made for holding the condensed water. The boss is fitted with two ports, communicating with the two divisions formed in the sphere. This receives a pipe, in which two thoroughfares communicate with the two ports. One thoroughfare forms the inlet, and the other the outlet, of the sphere, which turns on the pipe as on an axis, and is kept in equilibrium in its highest position when the pipes are dry, but sinks and opens the discharge opening when any condensed water is accumulated therein. (*Pro. Pro.*) September 2, 1880. Price 2d.

3,585. A. Smith, Reading. Facilitating the attachment of joinery work to brickwork.

For this, bricks are specially prepared with a dovetail key or block of wood formed in them, which are built into the wall where the attachment is to be made. (*Pro. Pro.*) September 3, 1880. Price 2d.

3,586. C. M. White, Southampton-buildings. Revolving or roller shutters or blinds.

The laths are formed of diamond-shaped section, and are bored to receive wires, upon which they are threaded. Between each lath is a distance piece of indiarubber, also threaded upon the wire, which takes a counter-sink formed on the side of the lath. (Com. by J. G. Wilson, New York, U.S.A.) (*Pro. Pro.*) September 3, 1880. Price 2d.

Published during the Week ending April 16, 1881.

3,261. T. Melling, Aigburth. Water meters or motors.

This is an improvement on Patents No. 2,647 of 1877 and No. 93 of 1879. It utilises the excess of the pressure of the water, &c., on the inlet side of the meter, over the pressure on the outlet side, such pressure acting on the face of the piston which moves the valves, this piston being in turn acted upon by the piston in the measuring cylinder, and when released from the pressure re-acting on the valves. Another piston valve is also introduced between the two formerly used, which cuts off the pressure from the valve-chamber, and thus ensures the valves acting properly. August 10, 1880. Price 8d.

3,480. A. B. Brown, Edinburgh. Hydraulic hoisting apparatus.

The improvement consists in attaching to the ram-head a rod which passes down a pipe parallel to the cylinder, which rod is twisted and passes through a short tube, which fits it. As the ram rises, the twist of the rod causes this tube to rotate; on this is threaded a nut with studs which engage a lever on a rocking-shaft, which shaft has on one end a crank carrying the fulcrum of the hand-lever, by which the valve is worked. The valve is thereby closed automatically. August 27, 1880. Price 6d.

3,551. L. W. Leeds, Westminster. Heating apparatus. This is an improvement on Patent No. 1,646 of 1879.

For heating rooms, &c., a stove with a dome shaped grate is employed, which is solid in its upwardly projecting portion, so as to compel the air to pass up at the sides against the fire-brick, and towards the illuminating windows. The grate is made to move backwards and forwards to crush the cinders, and allow them to fall through into the ash-box. At the sides of the fire-box are corrugated fire-bricks, having behind them a hot-air passage. Sept. 1, 1880. Price 6d.

3,567. H. Doulton, Lambeth. Joints of earthenware pipes.

The ends of the pipes are ground, and, being laid in chairs, a ring of cement in formed round them; clips being applied until the cement is set. Sept. 2, 1880. Price 6d.

3,609. C. Brothers, St. Pancras. Ceilings, roofs, and cornices, &c.

Glass panels are ornamented, painted, &c, as required, and are then washed with a solution, to fix the design in permanently. These panels are then secured to additional grounds of wood, fixed to the timbers of the ceiling. These additional grounds also allow of thorough ventilation. (*Pro. Pro.*) September 4, 1880. Price 2d.

3,644. J. C. Bloomfield, Fermanagh. Manufacture of cements, &c.

This is an addition to Patent No. 738 of 1880. A pink cement is formed by introducing ground burnt red brick-clay, instead of ground silica, and a yellow cement, by using ground burnt shale, and mixing these with calcined limestone and sulphate of lime. (*Pro. Pro.*) Sept. 8, 1880. Price 2d.

3,650. J. J. Sachs, Manchester. Production of materials for castings, cements, &c.

Melts together with sulphur, other non-metallic substances, such as plumbago, lime, magnesia, earth, &c., and metallic hydrates, metallic oxides and peroxides, and inorganic pigments; thereby produces a material available for castings and cements, &c. Sept. 8, 1880. Price 4d.

3,654. B. R. Phillipson, Dublin. Automatic flushing apparatus, for cleaning drains, &c.

A valve is attached to a lever, having a float at its other end. This lever travels in a slotted standard. A latch is pivoted in this standard, which carries an arm connected to a ball or other float. Another latch, reversed in position, is pivoted on the other side of the standard, also attached to a float. When the tank is full, the float attached to the first latch releases it, and allows the valve lever to travel up the standard, when it is caught by the second latch. The float attached to the valve lever then causes it to open the valve and allow all the water in the tank to flush the drain. The action of the latches is then reversed, and the tank again is filled. (*Pro. Pro.*) Sept. 8, 1880. Price 2d.

3,687. O. O. Williams, Liverpool. Machinery for dressing stone; applicable chiefly to dressing setts.

The machine resembles a steam hammer. The stone is laid on the anvil, and is dressed by a cutter, which is in the place of the ordinary hammer-block. (*Pro. Pro.*) Sept. 10, 1880. Price 2d.

39. H. J. Haddan, Strand. Street curbs and gutters for the reception of telegraph-wires.

The conduit for the telegraph-wires consists of a flanged chamber, which forms the street curb and a parallel flanged chamber, which forms the gutter. These chambers are connected together at the sides and ends, and covered with a removable cover, which forms a step and gutter piece. (Com. by J. D. Townsend, New York, U.S.A.). Jan. 4, 1881. Price 4d.

THE MUSEUM OF BUILDING AND SANITARY APPLIANCES.*

THIRTY years since, the writer of this notice made a determined effort to enlist the sympathies of the public generally, and of architects more especially, in favour of an important branch of sanitary science. The improvements advocated were prefixed by the text:—

"Ventilation is essential to health, and no system of warming should be tolerated which fails to afford a plentiful supply of fresh air to, and the withdrawal of vitiated air from, each and every inhabited apartment."

The comparatively small success which has attended the effort referred to may possibly be accepted by many architects and builders as conclusive evidence that the improvements advocated are not needed, or, at the least, are not imperatively called for. Unfortunately for progress, it rarely falls to the lot of house-constructors to hear the uncomplimentary remarks of occupants; these are usually made to third parties, called in to rectify faults, or supply omissions in buildings after their erection, when Time, "the avenger," has entered his protest.

While the public on the one hand complain that the designers of houses have failed to suggest ventilation, and in many cases have even deprecated its consideration, they, on the contrary, protest that their clients either "do not care for it," or "object to pay for it," and so the question is hopelessly shelved. In private residences this result is disappointing enough to those who appreciate good ventilation. They know that the evils of stuffy and unwholesome atmospheres, in living and sleeping rooms, are too frequently submitted to because neither architects nor clients, and certainly no speculative builders, will give themselves the trouble to investigate their causes and cure; or, better still, in all new buildings, their prevention.

But when neglect of ventilation has occurred in the erection of public buildings, or rooms constructed to receive large numbers of persons, the evil results are much more evident, and the cost of rectification very serious. Some notable examples might be quoted in the otherwise beautiful and successful buildings of some of our first architects, but to name them would be invidious.

These remarks are made as introductory to a statement of the objects of the Museum of Building and Sanitary Appliances,—the causes for its present enlargement,—and the motives for constructing the new portion, viz.: No. 19, Maddox-street, upon a plan differing materially from that usually adopted in London houses.

First.—The object of the proprietor has been that of gathering together under one management specimens of all sanitary manufactures and contrivances, together with building appliances, which can be deemed interesting to architects, their clients, and others.

Second.—The causes for the enlargement of the Museum are simply the steady growth of its attractions, and the impossibility of finding space sufficient, in the original galleries, for the many new appliances sent for exhibition.

Third.—The motives which have guided the erection of the new building are a desire to illustrate, practically, certain simple propositions for salubrity in house-construction. However far the effort may fall short of the necessity of the case, it will, it is to be hoped, excite interest and discussion, and promote the objects which the proprietor has at heart.

The special arrangements in the new building to which attention is invited are as follow:—

1. The provision of a fresh-air chamber in the sub-basement, in which the air for the supply of the several rooms is filtered and washed.

2. An upcast fresh-air channel to each room for the delivery of the purified air,—warm in winter, cool in summer.

3. The extraction of the vitiated air of each room, at all seasons, by upcast flues.

4. Improved arrangements for warming by means of grates of all kinds, hot water, &c.

5. Efficient arrangements for carrying off all bad odours at their sources, and the prevention of their diffusion within the building.

6. Effectual ventilation of the house-drains, soil-pipes, and public sewer, whereby all pressure of sewer air is prevented.

* Maddox-street, Regent-street, in connexion with the Architectural Societies' House in Conduit-street.

7. Facility for the personal examination of every foot of house-drain, usually buried beneath the basement floor, but in this house fully exposed to view.

To these attractions, which are special to the building itself, must be added the large number of building and sanitary appliances, before referred to, on permanent exhibition.

Much might be written upon each of the above seven subdivisions of this question of warming and ventilation, but consideration for your valuable space must curtail this paper.

There are, however, two points underlying the whole question of successful ventilation which urgently demand authoritative settlement, viz., the proper positions in inhabited rooms for the introduction of fresh air, and correlatively for the extraction of vitiated air.

While some authorities* advocate the admission of fresh air, moderately warmed in cold weather, at the lowest practicable level to avoid floor or carpet dust, and the extraction of the vitiated air at the highest level, or as nearly thereto as circumstances will permit; others† contend for the admission of the fresh air at a high level, even the highest, through the room cornice: thence to descend, acquiring warmth by contact with the ceiling and wall-faces, and mixing with the heated air of the room to escape by the ordinary open fire.

There is yet a third view,—of American importation,—which deprecates the introduction of fresh warmed air *in toto*, and advocates the warming of the air of the room by radiation or convection from steam or hot-water pipes, and the supply of cold air at all seasons, directed, Tobin fashion, upwards, *without draught!*

The views of the writer of this paper are strongly in favour of the first-mentioned modes of admission and extraction. It seems to him entirely erroneous to permit the admixture of descending fresh air with the impurities of respiration, products of combustion from artificial lighting, &c., to be again inhaled, though in a diluted form, on its passage downwards towards the open fire and chimney.

Further, such a principle of ventilation is opposed to the modern demands for economy of fuel by slow combustion, smoke consumption, &c., which should reduce draught, and thus avoid loss of heat and smoke by the open chimney.

The writer has not yet had opportunity of witnessing the practical application of the third alternative mode above referred to, which, however, is of too recent introduction to admit of an authorised judgment. But when the introducer of the system enforces its superior advantages by reference to the exhilarating effect of cold, even frosty air, upon those capable of enjoying it, it does seem to the writer that he overlooks the fact that both the young and aged, and too many even in mid-life, are strictly enjoined to avoid exposure to cold air, even to the extent of seeking a warmer climate in winter than that to which we are accustomed. D. O. BOYD.

LIPSCOMBE'S GLAZED TERRA COTTA.

MESSRS. LIPSCOMBE & Co., who have just now built a house in Oxford-street, close to the Princess's Theatre, have employed in the façade a considerable amount of their glazed terra cotta, which they point to, and, so far as we know, with truth, as "imperishable, colour unchangeable, cleaned by rain, hard and tough as granite, being covered with real glass, fired at more than double the heat of ordinary unglazed terra cotta." Some time ago, when we examined the material at their chief office, in Queen Victoria-street, we expressed a good opinion of it, and since then money has been spent in obtaining designs and moulds, and there are a large number of patterns to choose from. Rightly applied, it seems well calculated to improve street fronts.

Society of Engineers.—On Monday, the 2nd of May next, in the Society's hall, a paper will be read on "Floating Docks—The Depositing Dock, and the Double Power Dock," by Mr. John Standfield, the leading features of which are as follow:—Varying conditions under which docks are required; special feature of the depositing dock; method of working; depositing vessels on fixed staging along the shore; special feature of the double-power dock; method of working; its self-docking powers, not possessed by any other form of dock.

* Chas. Hood, F.R.S., &c.; E. A. Parkes, M.D., F.R.S.
† Douglas Galton, C.B., F.R.S., and others.

THE PRESIDENCY OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—The facts I stated last week may, I hope, have removed a good deal of misconception as to the real nature of By-law 26. In connexion with its working on the present occasion, there is another point which seems to be either imperfectly understood or else persistently misrepresented.

Much has been said about Mr. Jones's courteous offer to withdraw in favour of Mr. Street, and of that gentleman's neglect to avail himself of it. It is singular that it should have escaped the notice of Mr. Jones and his supporters, that, so far as any possible action of the Council in Mr. Street's favour is concerned, that offer was a mere form of words, without any practical meaning or value under the present by-laws. Had Mr. Jones actually withdrawn, and had Mr. Street expressed the strongest possible wish to stand in his place, the Council could not have nominated him, however unanimous they might have been in their desire to do so. They would have been compelled by By-law 26 to nominate Mr. Christian, the next Vice-president. It is, clear, therefore, to give effect to Mr. Jones's offer (dictated no doubt by a generous feeling, for which every one must give him credit), the only course possible under existing rules was precisely that which has been pursued under the provisions of By-law 30, which, unless it is intended to be applied in a case of this kind, must be considered a dead letter and a sham. According to the provisions of that by-law, Mr. Street has been nominated by two Fellows, the nomination being accompanied by a written undertaking from him to serve if elected. Such an undertaking is as nearly the expression of a wish to be elected as can fairly be expected of Mr. Street in his position, and it now only remains for Mr. Jones to prove the *bona fides* of his offer by withdrawing in his favour.

ARTHUR W. BLOMFIELD.

COLOUR.

SIR,—Mr. Standage, in his letter on "Questions in Colour," in a recent issue of your journal, condemns Chevreul's "Laws of Contrast" and his theory of complementary colours. He says,—"His theory of contrast has been almost universally accepted by uninquiring minds, probably because he applied it in every conceivable way."

In the latter half of this Mr. Standage pays a great compliment to Chevreul's most exhaustive, minute, and, to most eyes, conclusive experiments, on which he bases his laws of colour, examining and testing the effect "in every conceivable way," not resting satisfied with the single evidence of his own vision, but verifying it from the observations of others. As it is well known, and proved beyond a doubt, that a large number of individuals have not the capacity for perceiving delicate variations of colour, nor are able to distinguish one colour from another, Mr. Standage should adopt Chevreul's plan of not trusting entirely to his own eyes, but get a number of persons who have had a special training, and are accustomed to judge of colours, to test his conclusions. Amongst my personal friends I have several whose visual organs do not call up the complementary after fixing them intently for a short time on one of the primary colours placed in a strong light. This "successive contrast" is readily perceived by most persons, but, again, some of these fail to distinguish varying tones of the same or different colours, and one comes to the conclusion that very few persons have naturally an eye for colour, and it is only amongst individuals who have made colour their study that you can get unanimous opinion on the modifications colours undergo when placed together. In our art schools the greatest difficulty is found in getting students to copy accurately colour subjects, either from life or copy, and it is the very last thing that art-masters encourage their pupils to undertake, knowing what poor results are obtained by a large majority of those studying in the schools. It is from this very bluntness of vision that only a very few are even able to perceive and imitate the gradations of tone in copying from the casts in monochrome, and it is quite a common occurrence for the South Kensington authorities to return drawings to be finished, the half-tones having been nearly all omitted. To base his objections to Chevreul's laws on such absurd experiments as viewing different colours placed at an angle to the eye, makes one doubt whether Mr. Standage has thoroughly studied even the opening chapters of the "Principles of Harmony and Contrast of Colours." Inclining a paper on which two or more colours have been placed in juxtaposition causes the differently-coloured rays to intermingle before reaching the eye, and gives the very same impression in a modified degree as if those pigments were mechanically mixed, the result being that one colour, of course, does not undergo any change except by the action of "successive contrast," the complementary being mixed with the colour viewed.

For other facts on colour I refer your readers, in spite of Mr. Standage's remark on "uninquiring minds," to Chevreul; and if they will thoroughly study his book, testing his conclusions by actual experiment, they will not agree with the statement that the present laws governing the application of colour are "erroneous and unsatisfactory." R. W. S.

QUESTIONS IN COLOUR.

SIR,—As I have not seen any reply to Mr. Standage's letter on this subject which appeared in your issue of April 9th, I should like to point out that he is not likely to elucidate the questions he has raised in reference to Chevreul and his illustrations of contrast if he conducts his experiments in such a way as to bring into play laws of which he takes no account. Neither Chevreul nor any other experimenter with colour ever said or supposed that a surface covered with small squares, sixteen to the inch, of two contrasting colours, would afford an example of "complementary" action. The "superposition" of colour upon colour is a very different thing from the "juxta-position" of which Chevreul speaks. The effect of superposed colour is always to affect *sympathetically* the colour on which the other is laid. Similarly, minute alternations or subdivisions of colour result in admixture of the rays from the surface. Mr. Standage's other experiment is still more regardless of the proper conditions for the experiment which he was trying. He places the two colours *at right angles* to each other, with their edges in contact at the angle. Every artist knows that two walls or other surfaces at right angles to each other reflect each other's colour,—the nearer the angle the more intense the reflection. Let him place his colours as M. Chevreul directs, on the same plane, opposite the light; and, to conduct the experiment fairly, the colours should always be placed on a surrounding field of neutral grey, to cut them off from accidental influences.

Chevreul was often wrong in his deductions; for he did not know, as we now know, that the "primaries" and "complementaries" of the palette differ from those of "colour sensation." But he was never so far wrong as Mr. Standage, because he conducted his experiments with careful regard to the conditions necessary for their success and for impartial deduction.

J. D. CRACE.

HASTINGS NEW BATHS.

SIR,—When will our sanitary engineers learn the difference between sanitary and unsanitary appliances?

I am led to ask this question from having just recently paid a visit to the new baths erected close to the pier at Hastings. I found, to my astonishment, that all the private baths have fittings which I thought were those of the past only. Every bath has the waste and supply (hot and cold) all passing through the one aperture at the bottom of the bath, so that there are no means of cleansing the bath out, except by bringing water in pails, which few bath attendants would take the trouble to do.

I had a bath one morning. After the due allowance of hot water had been put in, the cold water was turned on, a thick dark fluid came in with it, discolouring the whole of the water in the bath, so that it had to be emptied and refilled. The last bather had apparently been a red Indian, who had divested himself of his war-paint. But suppose the last bather had been a white Indian, and just recovering from an attack of smallpox or scarlet fever, how should I have fared in a bath with the detached scales and germs of smallpox or fever floating about in the water?

The ladies' baths are also arranged in the same way, as a lady told me that when the water was turned into the bath, scum and hair (the residuum of the previous bather) came in with the water.

When the Government drew out the regulations for the London water companies in 1871, with a view to sanitary arrangements, they had this clause inserted:—

No. 26, *Bath Supply.*—"In every bath hereafter fitted or fixed, the outlet shall be *distinct* from, and *unconnected* with, the inlet or inlets; and the inlet or inlets must be

placed, so that the orifice or orifices shall be above the highest water-level of the bath."

With such an arrangement the bath is easily and effectually cleansed. Also in the first-class baths at Hastings there is certainly a nasty arrangement: each bath has a w.c. fixed at the end of it, bath and water-closet forming one piece of furniture. There should be a partition and door between the two.

Better ventilation is required for the corridors to the private baths. B. D. K.

CHURCH-BUILDING NEWS.

Burton-upon-Trent.—The new church dedicated to St. Margaret, intended to serve as a chapel-of-ease for St. Paul's Church, was opened on the 9th inst. The site, about a quarter of an acre in extent, is in Shobnall-street, and was given by the Marquis of Anglesey. The cost of the church has been defrayed by Mr. M. T. Bass, M.P. The church is of the thirteenth-century style of Gothic architecture of French type, and is built entirely of brick, except the nave piers and a few constructive features. It consists of a nave, 89 ft. in length from the back of the gallery to the chancel-steps, and 24 ft. 6 in. in width between the walls; north and south aisles, 8 ft. wide each in the clear, and chancel, with semicircular apse, 22 ft. 6 in. in length, and of the same width as the nave; the total interior length and breadth (including the thickness of the nave arcade) being respectively 111 ft. 6 in. and 45 ft. A good-sized vestry is provided on the south side of the chancel for the use of the choir, also one on the north side for the clergy. The chancel and nave are of the same height, being 41 ft. to the wall-plate and 51 ft. to the apex of the interior roof. The exterior height of the church to the ridge is 62 ft. 6 in. The exterior elevation is devoid of elaborate ornamentation, and nothing is added to the constructional features beyond a bell-turret, corbelled out from the west gable and surmounted by a stone cross at a height of 81 ft. above the pavement, and an iron cross at the apex of the apse at the east end. The aisles are without side windows, the church being built nearly up to the limits of the site on either side, but are lighted above by a continuous series of dormer windows, and are roofed in as lean-to's against the nave walls. The nave and chancel are lighted in the clearstory stage by seventeen lancet windows, filled with cathedral glass in leaded quarries in the nave and stained glass in the chancel. The chief characteristic of the east end is the unbroken sweep of the apse, rising 25 ft. without any break in its surface until the chancel windows are reached. All the roofs are boarded and covered with brindled tiles. The whole of the interior woodwork is executed in pitch pine. Sittings are provided for 540 adults. The whole of the brickwork is executed in local bricks, faced with Birmingham pressed bricks on the exterior, and pressed Heather bricks on the interior, and the stone dressings are all of Ancaster stone. Messrs. Lowe & Sons, of Union-street, were the general contractors, and they have been assisted by Messrs. Mason Bros. as joiners, and Messrs. Pickering Bros. as plumbers. Mr. J. Roddis, of Birmingham, has executed the whole of the carving in wood and stone. The reredos is of Caen stone, and has been executed from the design of the architect by Messrs. Lowe. All the panels have polished alabaster at the back, from Mr. Newton's quarries near Tutbury. The sculpture is the personal work of Mr. Roddis and his assistants. The pulpit is sexagonal, and is constructed of oak, the lower base being of Wingerworth stone. It has been executed from the architect's design by Mr. E. H. Cogswell, —the carving by Mr. Roddis. The five chancel-windows are filled with stained glass by Messrs. Burlison & Grylls, of London, and consist of the following subjects in the upper and lower panels, in order thus:—"St. Peter" and "The Agony in the Garden," "St. Mary (Virgin)" and "The Betrayal," "The Crucifixion" and "Bearing the Cross," "St. John" and "The Entombment," "St. Paul" and "The Resurrection." Below the windows the arcading is filled with a series of painted panels, executed also by Messrs. Burlison & Grylls, illustrative of the *Te Deum*. The lectern, copied from a design by Sir Christopher Wren, has been executed and supplied by Messrs. Hart, Son, Peard, & Co., of London. The altar-cloth and other furniture of the church, brass book-rests, offertory basin, curtains, kneeling-pads, cushions, &c., have been supplied by Messrs. Jones & Willis, of Birmingham. The contract for the heating has been carried out by Mr. F. Knight, of Burton. The bell in the turret at the west end weighs 2¼ cwt., and has been supplied by Messrs. Taylor & Co., of Loughborough. The lightning-conductor is by Messrs. Gray & Son, of Limehouse. The iron fence and gates have been cast and fixed by Messrs. Morgan & Waide, of Rotherham. The total cost of the church is estimated at 7,500*l.*, to which is to be added a sum of 3,500*l.* as an endowment to provide a curate. The Sunday-schools, now in course of erection at the back of the church, will add 2,000*l.* to the above amounts, making a total sum of 13,000*l.* thus given by Mr. M. T. Bass, M.P. The whole of the works have been carried out from the designs and under the personal superintendence of the architect, Mr. Reginald Churchill, of Burton-on-Trent, and Mr. E. H. Cogswell has acted as clerk of the works.

Priston.—The parish church of this village has just had additions made to it in the shape of a new pulpit and a lectern. The church, which contains some remains of the original Norman edifice, was restored some years ago. The pulpit is of Corsham Down stone, and has been made by Mr. Harry Hems, of Exeter. In design it is Norman, and the entire height is 5 ft. 6 in. The new lectern is of English oak, moulded and carved. The lectern is also the work of Mr. Hems.

Farncombe (Godalming).—Recent improvements and additions have been made to the internal arrangements of the chancel end of the Church of St. John the Evangelist, under the direction of Mr. Chas. Forster Hayward, F.S.A., of Montague-street, Russell-square, and a new organ, by Bishop & Co., fixed in the chancel aisle (south). The altar-platform has been laid with Burke & Co.'s best marble mosaic, with a pattern enclosing the sacred monograms, besides the cross, &c.; Messrs. Doulton & Co.'s tiles have been used over the super-altar, forming a running ornament of passion flowers; and the walls have been lined with Maw & Co.'s glazed tiles, and surround a new credence and piscina of stone formed as a niche in the wall; while the rest of the chancel pavement has been laid with some of the best tiles from the same firm by Messrs. Simpson & Co. A new oak Communion-rail, partially supported by iron standards, has given an improved appearance to the east end, and accords with further improvements to the reading-desk and pulpit. A new brass lectern has been added.

Miscellanea.

The Roman Villa near Brading.—Further discoveries have been made here. The angle of wall erected a few feet to the east of the semicircular structure between the principal room and the hypocaust has been determined to be an external wall of the building, as it is met by the undisturbed soil. The furnace in the wall of the hypocaust has been found in excellent preservation, being an arched passage formed of large tiles with layers of mortar. Several additional rooms, making now altogether twenty-five in number, have been traced, and the walls excavated. The central space has been determined to have been uncovered by buildings, forming a garden of considerable extent. One of the new chambers excavated has at its south-western corner an apse of 6 ft. diameter, and at its north-eastern end a deep pit or well. This seems to have been formed without steining out of the hard sandstone, is about 4 ft. in diameter, and has been excavated to a depth of 25 ft. At a depth of 14 ft. the skeleton of a young person was discovered, which presented in several bones the appearance of severe injury during life. Just beneath, a large semicircular stone, 5 ft. 6 in. by 3 ft. 9 in., had forced its way down the well, showing on the hard sandstone the path it had scooped out for itself. The raising of this stone was a matter of some difficulty, but it was successfully carried through. The series of coins from Severus (A.D. 222) to Constans (A.D. 350) has been rendered complete by the discovery of one of Magnentius (A.D. 250), who was the only missing emperor of the series.

Smokers Beware.—Captain Shaw, the chief officer of the Metropolitan Fire Brigade, reports thirty-five fires as having been caused by tobacco-smoking, as against three caused by drinking during last year.

The Newly-opened Pyramids in Egypt.—Brugsch Pasha has published a deeply-interesting account of the report he made to the late Mariette Pasha on the two Sakkara Pyramids recently opened. The *Times* gives a translation, from which we take the following:—"The two funereal monuments are not mere *mastaba* (ordinary rock tombs), but true pyramids. They enclose, the one, the tomb of King Pepi with his official title, 'Merira'; the other, the tomb of King Horemsaf, the son of Pepi, of the sixth dynasty, according to Manetho. The granite sarcophagi which once held the mummies of these two kings have been found in their original places. The hieroglyphics with which they are covered prove that the names of 'Pepi' and 'Horemsaf' belong to kings, and not to mere court functionaries. The mummy of the son of King Pepi, well preserved, though robbed of its ornaments and its linen, has been found in its pyramid. The two pyramids are the earliest examples of royal tombs of the period of the old empire adorned with hieroglyphics, which not only give the names of the kings who are buried there, but which also set forth for the first time a long series of religious texts, like the 'Book of the Dead' of subsequent epochs. They also mention the star 'Sothis' (Sirius), the planet Venus, and thus prove a certain astronomical knowledge as long ago as the 6th dynasty. The passages and the funereal chambers, with the sarcophagi, the mummies, and the objects originally placed there, have been either very roughly handled or taken away altogether. The *stela* of Una in the Boulac Museum gives a confirmation of the contents of these two pyramids."

A Builder's Will.—The will of Mr. John Clemence, late of Villiers-street, Strand, builder, who died in February last, at Ivy Cottage, Uxbridge-road, was proved on the 1st inst. by Mr. John Clemence, the son, and Mr. William Colman, the nephew, the executors. According to the *City Press*, the personal estate was sworn under 140,000*l.* The testator leaves to his said son the goodwill of his business, with the lease of the premises and all the stock-in-trade and plant, 10,000*l.*, and certain freehold and leasehold house property; upon trust for his daughter, Mrs. Anne Allen, 18,000*l.*; upon trust for his daughter-in-law, Mrs. Emily Clemence, the widow of his deceased son, George, and her only daughter by her said husband, 8,000*l.*; upon trust for his daughter-in-law, Mrs. Emily Clemence, the widow of his deceased son William, and their six children, 33,333*l.* 6s. 8d. Consols; he also gives to his last-named daughter-in-law, a house of furniture. There are special gifts of freehold and leasehold house property and money legacies upon trust for each of his grandsons, John William, Frank, Herbert, and Walter, the children of his late son William; and a number of other leasehold houses are given to them jointly with his said son John. His executor, Mr. Colman, is to receive an annuity during the continuance of the trusts, and all the residue of his property he gives to his son, Mr. John Clemence.

Nottingham.—The chancel ceiling of St. Andrew's Church has just been decorated. The ceiling is divided into twenty-four panels, which contain respectively the sacred monograms entwined with crowns of thorns alternating with the cross. The four centre panels contain half-lengths of the Evangelists on embossed and diapered gold ground; each panel is confined within a rich border, intersected at the corners with radiating lines. The whole was designed and executed by Messrs. Gibbs & Howard, of London, under the supervision of the architect, Mr. W. Knight, of Nottingham.

Builders' Benevolent Institution.—A dramatic performance by the "Thalians" (a company which includes some well-known amateurs) is announced to take place at the Imperial Theatre on Monday evening, the 9th of May, the proceeds of which will be devoted to the benefit of this excellent charity. Already more than 100*l.* worth of tickets have been subscribed for by the committee and other friends of the institution, so that the promoters hope to realise a handsome profit. Should any of our readers care to help, they will find particulars in our advertising columns.

Livingstone Memorial Church.—It is proposed to erect a church in the town of Blantyre as a memorial to Dr. Livingstone. Blantyre is the birthplace of the great missionary and explorer. The building is to have a tower in which a statue of Livingstone will be placed. The cost will approach 4,000*l.*

Art for the Streets.—In the *Magazine of Art* for May, there is an article, "The Streets as Art-Galleries," referring particularly to the large design which Mr. Hubert Herkomer, A.R.A., has executed for a pictorial advertisement for Messrs. Cassell, Petter, Galpin, & Co. We have before now lamented over the monstrosities which the hoardings in the streets display, and shall be glad if Mr. Herkomer's attempt to bring about an improvement in this direction should succeed. That gentleman thus writes on the subject:—"I go so far as to say that here is a grand opportunity for displaying art to the populace; for, with the means usually employed, some of the most interesting works of art could be produced. Professor Richmond proposed, in his address at Edinburgh, that pictorial advertisements should be executed under the supervision of some artists of standing. I go much further, and say artists of standing ought to execute these pictorial advertisements themselves. Let a body of artists form a guild, and their productions would soon drive out the present form of hideousness."

Palace for the Exhibition of Industry and Arts, Spain.—An opportunity is offered for the exhibition of professional skill by the tenders invited by the Government of Spain for the construction of a permanent edifice covering a surface of 15,000 square mètres for the Exhibition of Industry and Arts in Spain. The time up to which tenders may be sent in is twelve o'clock a.m., of the 15th of June, 1881, and the amount named for the edifice is 187,500*l*. If the successful candidate shall not happen to be a Spanish architect, he will be allowed on the third day after the choice is made to name one to superintend the works on his account. From this stipulation it is to be concluded that the competition is open to all without reference to nationality.

Mr. Sims Reeves's Farewell in Oratorio. Mr. Sims Reeves has announced eight farewell oratorio performances to take place at the Royal Albert Hall, under the conduct of Mr. Barnby. The first was given on Wednesday evening, 27th April, Handel's "Judas Maccabæus," when Madame Christine Nilsson, Madame Trebelli, Mr. Santley, and Mr. Sims Reeves sang the principal parts. The second is fixed for Wednesday evening, 4th May, when Haydn's "Creation," and Mendelssohn's "Hymn of Praise" will be given by Madame Albani, Miss Anna Williams, Mr. Edward Lloyd, Mr. Santley, and Mr. Sims Reeves with an orchestra and chorus of 1,000 performers.

The Revolving Shutters of Messrs. Clark, Bunnett, & Co., Limited, of Rathbone-place, have gained the highest award at the Melbourne Exhibition, and we are informed this company are now fitting up their patent shutters as fireproof divisions at the great drapery establishment, the Louvre, in Paris, and at eleven railway stations on the Anvers and Calais line, also the public markets at Ashton-under-Lyne and Southport, and the Spanish markets at Granada and Anteguera; these latter covering 31,700 superficial feet.

Accident Insurance Company, Limited. The list of claims for fatal and non-fatal accidents which the above company has paid in the year 1880 is now published, and is a striking commentary on the beneficial provisions of accident insurance. Upwards of 35,000*l*., and more, has been distributed in 1880 over 1,464 cases of accident, of which nineteen were fatal.

The Beaconsfield Tomb at Hughenden.—Many of our readers will thank us for reminding them that a view of Viscountess Beaconsfield's Monument at Hughenden Church (of which Mr. Arthur Vernon was the architect) will be found in the volume of the *Builder* for 1874 (xxxii., p. 908).

Bridlington.—At a recent meeting of the Bridlington School Board, it was resolved that, subject to the approval of the Education Department, Mr. T. Gray's tender to erect the new school in Hilderthorpe for 2,230*l*., and Messrs. Perkins's tender to supply the means of heating the same, be accepted.

"The Builder."—Our correspondent in Melbourne writes:—"I have much pleasure in informing you that the only bronze Medal for wood engraving has been awarded to the *Builder*."

Domestic Economy Congress.—A meeting of the General Committee of Ladies of the above Congress was held at the Society of Arts on Wednesday, when the details for the opening of the Congress at the Royal Albert Hall towards the end of June were discussed.

TENDERS

For four warehouses, Nos. 2, 3, 4, and 5, Bunhill-row, City, E.C., for Mr. W. Walker. Messrs. Davis & Emanuel, architects. Quantities by Mr. F. Downing:—

Higgs & Hill	£5,140 0 0
G. S. S. Williams & Son	5,130 0 0
G. S. Pritchard	4,989 0 0
R. Lawrance	4,684 0 0
Thos. Boyce	4,672 0 0
J. McLachlan & Son	4,671 0 0
John Grover	4,448 0 0
Wm. Brass	4,393 0 0

For roads, sewers, and surface water drains, for the British Land Company, Limited, on their Estate at Leyton Station. Mr. Henry B. Michell, surveyor:—

Dunmore, Hornsey	£5,511 0 0
Crockett, St. Pancras	5,490 0 0
McKenzie & Co., City	5,270 0 0
Harris, Camberwell	4,864 0 0
Thompson & Son, Battersea	4,850 0 0
Pizzey, Hornsey	4,579 0 0
Keeble, Regent's Park	4,567 0 0
Acock, City	4,358 0 0
Killingback, Camden Town	4,350 0 0
Bloomfield, Tottenham	4,099 0 0
Peill, Bromley	3,995 0 0
Jackson, Leyton	3,988 0 0
Wilson, Walthamstow (accepted)	3,900 0 0

For roads and surface water drains, for the British Land Company, Limited, on their Estate at Manor Park, Essex. Mr. Henry B. Michell, surveyor:—

Crockett, St. Pancras	£1,153 0 0
Dunmore, Hornsey	1,043 0 0
Acock, City	1,027 0 0
McKenzie & Co., City	1,009 0 0
Killingback, Camden Town	964 0 0
Bloomfield, Tottenham	923 0 0
Keeble, Regent's Park	765 0 0
Pizzey, Hornsey	735 0 0
Peill, Bromley	715 0 0
Thompson & Son, Battersea	710 0 0
Harris, Camberwell	700 0 0
Jackson, Leyton	688 0 0
Wilson, Walthamstow (accepted)	678 0 0

For the repair of two houses, The Grove, Stratford, and converting same into shops. Mr. F. Le Rossignol, architect:—

John Kingdon	£1,083 16 0
S. J. Scott	1,080 0 0
James Harper	1,063 0 0
Charles Howard	953 0 0
William Arber	939 0 0
James Angood (accepted)	905 0 0

For eight cottages in the Selhurst New-road. Mr. E. O. Pickering, architect:—

Burrows	£2,700 0 0
Segewick	2,059 0 0
Holloway	2,045 0 0
Barrett	1,950 0 0
L. Devereux & Sons (accepted)	1,695 0 0
Monk	1,452 16 0

For road and sewer works on the United Land Company's Greenhall Park Estate, Willesden Junction:—

Ford & Co.	£3,150 0 0
Nowell & Robson	2,493 0 0
Chas. Killingback	2,469 0 0
Geo. Acock	2,440 0 0
Jas. Dyer	2,419 10 0
J. Cardus	2,390 0 0
A. Walker	2,339 0 0
Geo. Felton (accepted)	2,330 17 6
H. Woodham (too late)	2,618 0 0
T. Kempling (too late)	2,222 0 0

For new house, exclusive of bricks to be supplied by proprietor, at Dunchurch, near Rugby, for Mr. M. Watts. Mr. Frederick Killby, architect. Quantities supplied:—

Daws	£897 0 0
Spencer	810 0 0
Bennett	797 0 0
Watson	785 0 0
Girsaman	756 0 0
Young	710 0 0
Ireson	699 0 0
Heap (accepted)	675 0 0
Tun	630 0 0

For restoring Newport Pagnell Mill, Bucks, for Mr. C. H. Whitworth, including contract for ironwork. Messrs. Usher & Anthony, architects. Quantities supplied:—

Cooper	£2,282 0 0
Tilly	2,130 0 0
Edy & Son	2,027 0 0
George	1,983 0 0
Harrison	1,910 0 0
Cosford	1,851 0 0
Foster	1,811 0 0
Ireson	1,750 0 0

For the erection of an establishment for the reception of invalids, visitors, and residents, and being the Mont Dore of Bournemouth, to be erected on the site of the Glen, at Bournemouth, Hampshire, including the baths establishment in connexion therewith. Mr. A. Bedborough, architect. Quantities supplied by Messrs. R. L. Curtis & Sons:—

		Extra for Penmon stone.
Colls	£41,900	£3,867
Rouse	39,100	1,650
Perry & Co.	38,000	—
Jenkins & Son	37,850	2,200
Jones & Co.	37,450	2,300
Kirk & Randall	36,479	2,171
Foley	36,449	1,429
Hoare Bros. & Co.	33,999	1,497
Blatchford	33,700	500
Howell & Son	33,400	1,260
Stroud	32,500	1,500
Clarke	30,998	1,159

For dwelling-house for Mr. T. Danby, Leigh, near Manchester. Mr. T. Ormrod, architect:—

J. Wright	£1,080 0 0
T. Norbury (accepted)	1,000 0 0

For the erection of a parsonage house in the Neeld-road, Kilburn, Middlesex, for the Rev. Ralph Williams. Mr. A. Letts, architect. Quantities supplied by Messrs. Curtis & Sons:—

Reed	£2,989 0 0
Patman & Fotheringham	2,598 0 0
Woodward	2,576 0 0
Roberts	2,467 0 0
Yerbury	2,438 13 0
Boyce	2,398 0 0

For pulling down and rebuilding No. 12, King's-road, Chelsea, for Mr. John Holder. Mr. George Fagg, architect:—

		Allowance for old material.
Lathey Bros.	£1,400	£25
Hoare & Son	1,293	20
Richardson	1,260	—
Craske	1,198	—

For St. Mary's Roman Catholic Elementary Schools, Great Yarmouth. Messrs. Bottle & Olley, architects:—

Excavator's, Bricklayer's, Plasterer's, and Mason's Work.

	Gross amount.	Deduct for old materials.
Thos. Howes	£1,369 0 0	£226 0 0
Beech & Cork	1,325 0 0	190 0 0
Edw. Howes	1,340 0 0	245 0 0
Jas. Leggett*	1,385 0 0	305 0 0

* Accepted.

Slater's Work.

Dawber & Son (accepted)	£224 10 0

Carpenter and Joiner's, Plumber's, Glazier's, and Painter's Work.

T. Cooper	£1,082 10 0
Kemp	1,047 0 0
R. Davey	961 0 0
G. Salmon	932 0 0
B. Springall	906 10 0
J. Bray	871 5 0
J. H. Want (accepted)	827 0 0

Smith and Ironfounder's Work.

Barge & Freeman (accepted)	£160 0 0

For the erection of a villa residence at Thicket-road, Penge, for Mr. C. Rolls. Mr. R. Cruwys, architect:—

J. O. Richardson, Clapham (accepted)	£1,195 0 0

For workshop in Fournier-street, Shoreditch, for Mr. Keaves. Messrs. T. & W. Stone, architects:—

Thomason	£1,616 0 0
Beale	1,150 0 0
Forrest	1,036 0 0
Shurmur	1,020 0 0
Crabb	985 0 0
Young	946 0 0
Steel	906 12 0

For alterations and repairs at 6, Carburton-street, Portland-place, for Mr. Williams. Mr. John H. Martin, architect:—

J. Butlin	£425 0 0
Watson Bros.	394 10 0
R. Perkins	379 0 0
E. White (accepted)	315 0 0

For repairs and painting to houses, Princes-road, Kennington-cross. Mr. N. F. Potter, architect:—

Norton	£148 0 0
Hersey	147 5 0
B. Cook (accepted)	145 0 0

For alterations to 161, New Bond-street. Mr. J. T. Wimperis, architect:—

C. Fish	£223 0 0
Curtis	195 0 0
R. Perkins (accepted)	193 0 0

For house at Orpington, Kent, for Mr. Alfred Brown. Mr. G. St. Pierre Harris, architect:—

Haisman	£690 0 0
Wood	685 0 0
Treadwell	657 0 0
Taylor & Son	620 0 0
Wright (accepted)	595 0 0

For house in the village, Orpington, Kent. Mr. G. St. Pierre Harris, architect:—

Taylor & Son (accepted).

For alterations and additions to Curzon House, Mayfair. Quantities by Mr. Joseph Rookwood:—

Jas. Smith & Sons (accepted)	£3,150 0 0

For alterations and repairs to Nos. 42 and 43, London-street, Tottenham-court-road. Mr. Walter Hall, architect:—

King	£406 0 0
Adams	352 0 0
Martin	320 0 0

For the restoration of the Church of St. Mary Magdalene, Lincoln. Messrs. Bodley & Garner, architects:—

Martin & Sims (accepted)	£1,288 0 0

For warming and ventilating, by their new hydro-caloric apparatus, the new wing of Bishop's Down Grove Hydropathic Establishment, Tunbridge Wells. Mr. B. Tabberer, architect:—

J. Weeks & Co., Chelsea	£460 0 0

For rebuilding the Dover Castle public-house, Rotherhithe-street, for Mr. Francis Dawes. Mr. J. Willing, architect:—

J. Beale (accepted)	£1,290 0 0

For bar fittings at the Empress of India, Lauriston-road, Victoria Park, for Mr. A. G. Sibun. Mr. Treacher, architect:—

Canning & Mullins	£367 0 0
Gill	347 0 0
J. Beale (accepted)	318 0 0

For alterations and additions to premises for Capital and Counties Banking Company, Aldershot. Mr. F. Mew, architect. Quantities not supplied:—

Evans, London	£1,280 0 0
Yerling, London	1,190 0 0
Garland, Aldershot (accepted)	1,150 0 0

For new premises, 34, Temple-street, Bristol, for Mr. Darling. Mr. W. Cloutman, architect. Quantities by the architect:—

E. & J. Weeks	£399	0	0
B. Bett	357	0	0
R. Walters	320	0	0
Weaver & Mizen	316	0	0
W. Dubin	314	9	0
Belmont & Quin	310	0	0
Banner & Co.	305	0	0
J. Bastow	305	0	0
H. Bevan	305	0	0
S. Cowlin	297	0	0
Eastabrook & Sons	285	0	0
Forse & Ashley	285	0	0
T. Tucker	281	0	0
G. & W. Roberts	280	0	0
Sharp & Graham	273	0	0
Lovell & Sons	269	0	0
C. A. Hayes	263	0	0
J. Perrott	259	10	0
J. & W. Hayes	254	0	0
E. M. Hodges	245	0	0
J. James (accepted)	235	0	0

For Billinghay police station. Plans and quantities by Mr. Charles Kirk, County Surveyor for the Parts of Kesteven:—

Spink & Copeland, Heckington	£1,570	0	0
Featherstone & Perkins, Heckington	1,494	16	0
Robert Wartnaby, Sleaford	1,290	0	0
Samuel Alister, Wisbeach	1,275	10	0
Henry Clark, Boston	1,244	11	0
Ingall & Wilson, Billinghay	1,227	5	3
Henry Rannels & Son, Wisbeach	1,220	0	0
Samuel Sherwin, Boston	1,195	0	0
Knight & Maxey, Martin and Sleaford	1,120	0	0
Wm. Jordan, Billinghay (accepted)	1,100	0	0

For alterations to premises at North-street, Clapham, for a coffee tavern. Mr. C. Jenkin Jones, architect. No quantities:—

Garrett & Son	£495	0	0
Burman	489	0	0
J. O. Richardson	449	0	0
Holloway	438	0	0

For the erection of a villa residence at Upper Norwood, for Mr. R. W. Wheeler. Mr. T. Elworthy, architect:—

Waterman	£4,300	0	0
Marshall	3,880	0	0
Nightingale	3,672	0	0
Wilkins	3,527	0	0
Bruton	3,480	0	0
Strange	3,423	0	0
Bowyer	3,400	0	0
Niblett	3,400	0	0
Smith	3,390	0	0
Holledge & Stuart	3,375	0	0
Hearle & Son	3,325	0	0
Higgs	3,250	0	0
Legg	3,222	0	0
Smith & Sons	3,185	0	0
D. C. Jones	3,080	0	0
Colliver	2,990	0	0
J. O. Richardson	2,989	0	0
Rowse	2,705	0	0
Hare	2,697	0	0

For the erection of a house, Third Avenue, West Brighton, for Mr. Geo. H. Hammond. Mr. Woodman, architect:—

W. A. & B. Field	£4,740	0	0
Parsons & Sons	4,350	0	0
Geo. R. Lockyer	4,220	0	0
E. J. Ockenden	4,100	0	0
J. Bruton	3,975	0	0
J. Barnes	3,960	0	0
John T. Chappell (accepted)	3,826	0	0

For additions to No. 4, Archer-terrace, Balham, for Mr. J. A. Southon. Mr. J. Randall Vining, architect:—

J. Rumens	£424	0	0
W. Marriage	410	0	0
Thos. Potterton (accepted)	396	0	0

For alterations and additions to a warehouse and stables for the Metropolitan and Suburban Milk Supply Association, Limited, Notting-hill. Mr. J. Randall Vining, architect:—

Higgs & Hill	£1,240	0	0
Thos. Potterton	1,139	0	0
W. Marriage	1,050	0	0
J. & J. Wood (too late)	1,047	0	0
Thos. Boyce	879	0	0
P. H. Jordan (accepted)	843	0	0

For houses and shops, St. George's-road, Great Yarmouth, for Mr. F. Carpenter, allowing for old materials. Messrs. Bottle & Olley, architects:—

E. Howes	£1,680	0	0
R. Davey	1,531	0	0
G. Salmon	1,490	0	0
T. Howes	1,467	0	0
Rouse & Beech	1,450	10	0
J. Harbert	1,439	10	0
B. Soringall	1,411	0	0
J. Want (accepted)	1,335	0	0

For painting, &c., at Nos. 19, 20, 21, and 22, Milton-street, City, for Messrs. Tubbs, Hiscock, & Co. Mr. W. Smith, architect:—

Durnford & Langham	£127	0	0!
Harper	120	0	0
Shurmur	102	10	0
Larke & Son	98	0	0
Steel Bros.	60	0	0
Johnson & Co.	39	9	0!

For the construction of certain sewers in various streets for the Vestry of Chelsea. Mr. G. H. Stayton, C.E., surveyor:—

J. Thompson & Son	£6,000	0	0
W. J. Botterill	5,995	0	0
Braid & Co.	5,375	0	0
J. Mears	5,250	0	0
C. Killingback	4,894	0	0
J. Neave & Son	4,821	0	0
Nowell & Robson (accepted)	4,790	0	0
J. Ford & Co.	4,600	0	0

For two semi-detached residences at Forest-gate. Messrs. A. & C. Harston, architects. Quantities supplied:—

Crockett	£2,400	0	0
Harris & Wardrop	2,346	0	0
Kilby	2,322	0	0
Johnson	2,275	0	0
Hearle & Son	2,153	0	0
Nichols	2,100	0	0
Shurmur (accepted)	2,070	0	0

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P. V. (the publication does not reach us).—P. A. M (we are not impressed by the scheme).—H. K. (we cannot recommend books. The "Adam style" is, of course, the style practised by the brothers Adam) —A. F. (we cannot point out books).—T. A. D. (we believe it is at the Ecole des Beaux Arts).—Practical.—A. C.—J. L. W.—Dr. W. —W. C.—J. R. V.—G. St. P. H.—C. S.—J. P.—G. B.—W. G.—J. W. & Co.—P. B.—H. H.—C. M.—D. & Co.—G. H. S.—W. L. C.—J. P. M. —Mr. M.—F. G.—W. S.—W. H.—W. C.—M. & S.—W. B.—G. J.— C. G. R.—A. J. P.—W. H. P.—F. C. R.—H. C. S.—F. S.—H. B. M.— T. O.—E. O. P.—P. & M.—Mr. B.—J. E. & S. E.—R. P.—J. G. R.— O. C.

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